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# Flaming Gorge Reservoir Sweetwater County, Wyoming, and Daggett County, Utah

(U.S.) National Eutrophication Survey, Corvallis, OR

Prepared for

Corvallis Environmental Research Lab, OR

Dec 77

PB 287771

# U.S. ENVIRONMENTAL PROTECTION AGENCY
# NATIONAL EUTROPHICATION SURVEY

**WORKING PAPER SERIES**

REPORT

ON

FLAMING GORGE RESERVOIR

SWEETWATER COUNTY, WYOMING,

AND

DAGGETT COUNTY, UTAH

EPA REGION VIII

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**and**

**ENVIRONMENTAL MONITORING & SUPPORT LABORATORY - LAS VEGAS, NEVADA**

G.P.O. 699-440

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# Report

on

# Flaming Gorge Reservoir

Sweetwater County, Wyoming,

and

Daggett County, Utah

EPA Region VIII

Working Paper No. 885

With the cooperation of the

Wyoming Department of Environmental Quality,

the Utah State Division of Health,

and the

Wyoming and Utah National Guard

December, 1977

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16. ABSTRACT

Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

17. KEY WORDS AND DOCUMENT ANALYSIS

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|---|---|---|
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# FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to freshwater lakes and reservoirs.

## OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point-source discharge reduction and non-point source pollution abatement in lake watersheds.

## ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

## LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's fresh water lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by EPA and to augment plans implementation by the states.

ACKNOWLEDGEMENT

The staff of the National Eutrophication Survey (Office of Research & Development, U. S. Environmental Protection Agency) expresses sincere appreciation to the Wyoming Department of Environmental Quality and the Utah Department of Social Services for professional involvement, to the Wyoming and Utah National Guards for conducting the tributary sampling phase of the Survey, and to the Wyoming and Utah wastewater treatment plant operators who voluntarily provided effluent samples.

The staffs of the Wyoming Water Quality Division and the Utah Bureau of Water Quality provided invaluable lake documentation and counsel during the Survey, reviewed the preliminary report, and provided critiques most useful in the preparation of this Working Paper.

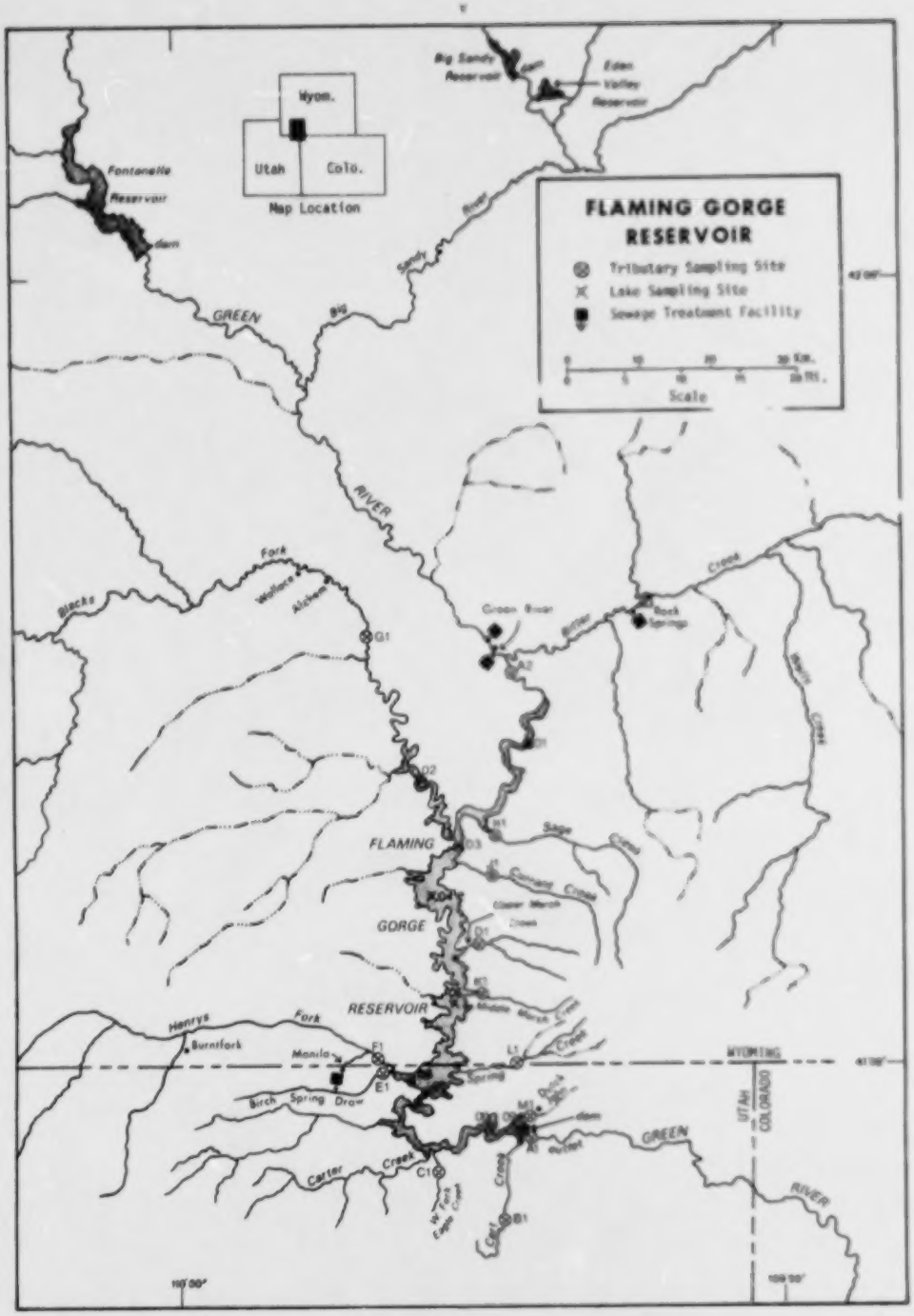
Brigadier General James L. Spence, the Adjutant General of Wyoming; Major General Maurice L. Watts, the Adjutant General of Utah; and Project Officers Colonel Donald L. Boyer and Lt. Colonel T. Ray Kingston who respectively directed the volunteer efforts of the Wyoming and Utah National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY RESERVOIRS

State of Wyoming

| NAME | COUNTY |
|---|---|
| Big Sandy | Sublette, Sweetwater |
| Boulder | Sublette |
| Boysen | Fremont |
| De Smet | Johnson |
| Flaming Gorge | Sweetwater, WY; Daggett, UT |
| Fremont | Sublette |
| Glendo | Converse, Platte |
| Keyhole | Crook |
| Ocean | Fremont |
| Seminoe | Carbon |
| Soda | Sublette |
| Viva Naughton | Lincoln |
| Woodruff Narrows | Uinta |
| Yellowtail | Bighorn, WY; Bighorn, Carbon, MT |


FLAMING GORGE RESERVOIR
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
Scale
Map Location
Wyom.
Utah
Colo.
Big Sandy Reservoir
Eden Valley Reservoir
Fontenelle Reservoir
dam
GREEN
RIVER
Big Sandy River
Blacks Fork
Hams Fork
Slate Creek
Green River
Rock Springs
Sage Creek
Cottonwood Creek
Green Mtn. Creek
FLAMING GORGE RESERVOIR
Henrys Fork
Burntfork
Manila
Birch Spring Draw
Carter Creek
Spring Creek
Mill Creek
Dutch John
dam
outlet
WYOMING
UTAH
COLORADO
G1
A2
A1
D2
D3
D1
B2
B1
E1
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
L1
110°00'
109°50'

FLAMING GORGE RESERVOIR

STORET NO. 5605

## I. CONCLUSIONS

### A. Trophic Condition:

Flaming Gorge Reservoir ranked third in overall trophic quality among the 14 Wyoming lakes and reservoirs sampled in 1975 when compared using a combination of six water quality parameters*. However, the reservoir data indicate this long water body (about 146 km; Anonymous, 1968) is eutrophic at stations 1, 2, and 3; moderately eutrophic at stations 4 and 5; and mesotrophic at stations 6, 7, 8, and 9 (see map, page v).

At eutrophic stations 1, 2, and 3, spring and fall mean total phosphorus ranged from 28 to 193 µg/l; mean orthophosphorus ranged from 4 to 19 µg/l; mean inorganic nitrogen ranged from 50 to 670 µg/l; mean chlorophyll a ranged from 4.5 to 16.9 µg/l; and mean Secchi disc transparency ranged from 0.3 to 2.5 meters. Marked depression of dissolved oxygen with depth occurred at station 3 in September. Survey limnologists noted that the water at stations 1 and 2 was silty and that macrophytes were growing along much of the shoreline in May. They observed an algae bloom in progress at station 3 in September, and algal blooms are reported to have become increasingly severe over the last decade in the Green River and Blacks Fork arms of the reservoir (CH2M Hill, 1977).

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* See Appendix A.

At moderately eutrophic stations 4 and 5, spring and fall mean total phosphorus ranged from 13 to 91 µg/l; mean inorganic nitrogen ranged from 230 to 1,480 µg/l; mean orthophosphorus ranged from 2 to 6 µg/l; mean chlorophyll a ranged from 3.2 to 16.0 µg/l; and mean Secchi disc transparency ranged from 0.2 to 1.6 meters. Depression of dissolved oxygen with depth occurred at both stations in August and September (minimum concentration of 4.4 mg/l). Survey limnologists noted macrophytes along the shoreline at both stations in May and an algal bloom at station 5 in September.

At mesotrophic stations 6 - 9, spring and fall mean total phosphorus ranged from 4 to 25 µg/l; mean inorganic nitrogen ranged from 440 to 960 µg/l; mean orthophosphorus ranged from 2 to 16 µg/l; mean chlorophyll a ranged from 1.5 to 3.2 µg/l; and mean Secchi disc transparency ranged from 2.4 to 15.2 meters. Depression of dissolved oxygen with depth occurred at stations 6 and 7 in August and September (minimum concentration of 4.8 mg/l). Survey limnologists noted macrophytes along the shoreline at station 6 in May but saw no surface algal concentrations at any of the sampling times.

B. Rate-Limiting Nutrient:

The algal assay results indicate that Flaming Gorge Reservoir was limited by phosphorus at the times the samples were collected (05/16/75 and 09/22/75). The reservoir data indicate phosphorus limitation at all sampling stations and times, with the exception of station 1 in May and September and station 2 in May.

C. Nutrient Controllability:

1. Point sources--During the sampling year, the listed point sources accounted for 21.7% of the total phosphorus input to Flaming Gorge Reservoir. The wastewater treatment plants at Green River and Rock Springs contributed a major portion of the total (7.1% and 12.2%, respectively). The plant at Manila accounted for 0.6%, and the Green River-Upland Addition facility was estimated to have contributed 1.8%. In addition, wastewater treatment facilities at Kemmerer, Diamondville, Lyman, Granger, and Mountain View, which serve a combined population of about 5,000, discharge to Blacks Fork or its tributaries well upstream from the reservoir. The relatively high phosphorus export rate and low N/P ratio of Blacks Fork (see page 17) indicate these more-distant treatment facilities may be significant nutrient sources.

The sampling year phosphorus loading of 1.35 $g/m^2$ is greater than that proposed by Vollenweider (Vollenweider and Dillon, 1974) as a eutrophic loading (see page 18). Because the reservoir is phosphorus limited much of the time, all inputs should be minimized to the greatest practicable extent to at least slow the present rate of eutrophication. It is calculated that the present load would have to be reduced by about 44% to improve the present trophic condition. While even complete removal of phosphorus at the listed point sources would still leave a eutrophic loading, it would be the first step in an improvement program and would be effective if non-point sources can also be controlled.

2. Non-point sources--Non-point sources contributed 78.3% of the total phosphorus load during the sampling year. The Green River contributed 26.0% and Blacks Fork contributed 40.1%. Six other gaged tributaries collectively contributed 4.2%. The ungaged minor tributaries and immediate drainage were estimated to have contributed 6.7% of the total.

Much of the water use in the drainage basin includes irrigation (Anonymous, 1975), and there are phosphate deposits in the drainage (CH2M Hill, 1977). Return flows from irrigated areas and runoff from range land and the phosphate deposit areas may be significant contributors to the nutrient load. A further investigation is needed to determine the controllability of nutrients from such sources.

## II. RESERVOIR AND DRAINAGE BASIN CHARACTERISTICS†

### A. Morphometry††:

1. Surface area: 137.67 kilometers$^2$.
2. Mean depth: 33.9 meters.
3. Maximum depth: 153.0 meters.
4. Volume: 4,667.013 x $10^6$ m$^3$.
5. Mean hydraulic retention time: 2.3 years (based on outflow).

### B. Tributary and Outlet:
(See Appendix C for flow data)

1. Tributaries -

| Name | Drainage area (km$^2$)* | Mean flow (m$^3$/sec)* |
|---|---|---|
| Green River | 25,900.0 | 48.400 |
| Cart Creek | 72.5 | 0.402 |
| W. Fork Eagle Creek | 8.0 | 0.088 |
| Upper Marsh Creek | 116.5 | 0.076 |
| Birch Spring Draw | 62.2 | 0.128 |
| Henry's Fork | 1,346.8 | 2.360 |
| Blacks Fork | 8,029.0 | 10.500 |
| Sage Creek | 303.0 | 0.280 |
| Unnamed Creek M-1 | 18.9 | 0.020 |
| Minor tributaries & immediate drainage - | 3,114.4 | 3.928 |
| Totals | 38,971.3 | 66.182** |

2. Outlet -

| | | |
|---|---|---|
| Green River | 39,109.0*** | 63.180 |

### C. Precipitation****:

1. Year of sampling: 17.6 centimeters.
2. Mean annual: 18.5 centimeters.

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† Table of metric conversions--Appendix B.
†† Prior, 1974.
* For limits of accuracy, see Working Paper No. 175, "...Survey Methods, 1973-1976".
** Sum of inflows adjusted to equal outflow plus evaporation loss.
*** Includes area of reservoir.
**** See Working Paper No. 175.

## III. LAKE WATER QUALITY SUMMARY

Flaming Gorge Reservoir was sampled three times during the open-water season of 1974 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from two or more depths at nine stations on the reservoir (see map, page v). During each visit, a single depth-integrated (4.6 m or near bottom to surface) sample was composited from the stations for phytoplankton identification and enumeration; and during the May and September visits, two samples were composited for algal assays. Also each time, a depth-integrated sample was collected from each of the stations for chlorophyll a analysis. The maximum depths sampled were 4.6 meters at station 1, 6.1 meters at station 2, 23.2 meters at station 3, 29.3 meters at station 4, 48.8 meters at station 5, 21.9 meters at station 6, 57.9 meters at station 7, 61.0 meters at station 8, and 67.1 meters at station 9.

The sampling results are presented in full in Appendix D and are summarized in the following table.

A. SUMMARY OF PHYSICAL AND CHEMICAL CHARACTERISTICS FOR FLAMING GORGE RESERVOIR
STORET CODE 5605

| PARAMETER | 1ST SAMPLING ( 5/15/75) 9 SITES RANGE | MEAN | MEDIAN | 2ND SAMPLING ( 8/ 7/75) 9 SITES RANGE | MEAN | MEDIAN | 3RD SAMPLING ( 9/22/75) 9 SITES RANGE | MEAN | MEDIAN |
|---|---|---|---|---|---|---|---|---|---|
| TEMP (C) | 2.9 - 14.6 | 6.5 | 5.4 | 6.8 - 22.5 | 16.4 | 19.3 | 9.8 - 19.1 | 16.0 | 17.5 |
| DISS OXY (MG/L) | 7.4 - 12.0 | 9.8 | 10.0 | 4.4 - 8.4 | 6.8 | 6.8 | 2.8 - 8.8 | 6.6 | 7.0 |
| CNDCTVY (MCROMO) | 474. - 723. | 521. | 508. | 336. - 1316. | 558. | 524. | 341. - 612. | 518. | 522. |
| PH (STAND UNITS) | 8.3 - 8.8 | 8.5 | 8.5 | 8.3 - 9.3 | 8.7 | 8.7 | 8.0 - 8.6 | 8.4 | 8.5 |
| TOT ALK (MG/L) | 151. - 294. | 167. | 163. | 93. - 191. | 150. | 158. | 110. - 169. | 152. | 159. |
| TOT P (MG/L) | 0.010 - 0.193 | 0.027 | 0.014 | 0.004 - 0.099 | 0.018 | 0.014 | 0.008 - 0.058 | 0.018 | 0.012 |
| ORTHO P (MG/L) | 0.002 - 0.019 | 0.004 | 0.002 | 0.002 - 0.015 | 0.005 | 0.004 | 0.002 - 0.016 | 0.004 | 0.003 |
| NO2+NO3 (MG/L) | 0.020 - 1.430 | 0.683 | 0.680 | 0.020 - 1.300 | 0.431 | 0.440 | 0.020 - 1.460 | 0.485 | 0.420 |
| AMMONIA (MG/L) | 0.020 - 0.060 | 0.028 | 0.030 | 0.020 - 0.180 | 0.035 | 0.020 | 0.020 - 0.050 | 0.022 | 0.020 |
| KJEL N (MG/L) | 0.300 - 1.300 | 0.431 | 0.400 | 0.200 - 0.500 | 0.329 | 0.300 | 0.200 - 0.800 | 0.315 | 0.300 |
| INORG N (MG/L) | 0.040 - 1.450 | 0.711 | 0.710 | 0.070 - 1.330 | 0.466 | 0.460 | 0.050 - 1.480 | 0.507 | 0.440 |
| TOTAL N (MG/L) | 0.420 - 2.220 | 1.115 | 1.050 | 0.220 - 1.600 | 0.761 | 0.740 | 0.420 - 1.660 | 0.800 | 0.720 |
| CHLRPYL A (UG/L) | 1.5 - 13.2 | 4.9 | 2.7 | 2.7 - 12.0 | 4.6 | 3.2 | 2.4 - 16.9 | 7.4 | 3.3 |
| SECCHI (METERS) | 0.3 - 15.2 | 4.1 | 4.0 | 0.2 - 4.6 | 2.8 | 2.8 | 0.6 - 5.5 | 3.2 | 4.6 |

B. Biological Characteristics:

1. Phytoplankton -

| Sampling Date | Dominant Genera | Algal Units per ml |
|---|---|---|
| 05/15/75 | 1. Stephanodiscus sp. | 1981 |
| | 2. Fragilaria sp. | 775 |
| | 3. Diatoma sp. | 258 |
| | 4. Chroomonas sp. | 258 |
| | 5. Navicula sp. | 43 |
| | Total | 3315 |
| 08/07/75 | 1. Chroomonas sp. | 1331 |
| | 2. Aphanizomenon sp. | 951 |
| | 3. Fragilaria sp. | 428 |
| | 4. Cryptomonas sp. | 333 |
| | 5. Melosira sp. | 190 |
| | Other genera | 428 |
| | Total | 3661 |
| 09/22/75 | 1. Aphanizomenon sp. | 1086 |
| | 2. Cryptomonas sp. | 827 |
| | 3. Chroomonas sp. | 465 |
| | 4. Oscillatoria sp. | 103 |
| | Total | 2481 |

2. Chlorophyll *a* -

| Sampling Date | Station Number | Chlorophyll *a* (µg/l) |
|---|---|---|
| 05/15/75 | 1 | 4.5 |
| | 2 | 13.2 |
| | 3 | 10.6 |
| | 4 | 5.4 |
| | 5 | 2.6 |
| | 6 | 2.7 |
| | 7 | 1.6 |
| | 8 | 1.5 |
| | 9 | 1.7 |
| 08/07/75 | 1 | 12.0 |
| | 2 | 4.8 |
| | 3 | 5.9 |
| | 4 | 3.9 |
| | 5 | 3.2 |
| | 6 | 2.7 |
| | 7 | 3.2 |
| | 8 | 2.7 |
| | 9 | 3.0 |
| 09/22/75 | 1 | 12.3 |
| | 2 | 6.9 |
| | 3 | 16.9 |
| | 4 | 3.3 |
| | 5 | 16.0 |
| | 6 | 3.1 |
| | 7 | 2.7 |
| | 8 | 2.7 |
| | 9 | 2.4 |

C. Limiting Nutrient Study:

1. Autoclaved, filtered, and nutrient spiked -

a. May samples -

1). Stations 4, 5, 6, and 7 -

| Spike (mg/l) | Ortho P Conc. (mg/l) | Inorganic N Conc. (mg/l) | Maximum yield (mg/l-dry wt.) |
|---|---|---|---|
| Control | <0.005 | 0.775 | 0.2 |
| 0.050 P | <0.055 | 0.775 | 14.7 |
| 0.050 P + 1.0 N | <0.055 | 1.775 | 18.8 |
| 1.0 N | <0.005 | 1.775 | 0.2 |

2). Stations 8 and 9 -

| Spike (mg/l) | Ortho P Conc. (mg/l) | Inorganic N Conc. (mg/l) | Maximum yield (mg/l-dry wt.) |
|---|---|---|---|
| Control | <0.005 | 0.700 | 0.2 |
| 0.050 P | <0.055 | 0.700 | 15.1 |
| 0.050 P + 1.0 N | <0.055 | 1.700 | 16.7 |
| 1.0 N | <0.005 | 1.700 | 0.2 |

b. September samples -

1). Stations 1, 2, 3, and 4 -

| Spike (mg/l) | Ortho P Conc. (mg/l) | Inorganic N Conc. (mg/l) | Maximum yield (mg/l-dry wt.) |
|---|---|---|---|
| Control | 0.005 | 0.330 | 0.4 |
| 0.050 P | 0.055 | 0.330 | 13.7 |
| 0.050 P + 1.0 N | 0.055 | 1.330 | 23.2 |
| 1.0 N | 0.005 | 1.330 | 0.4 |

2). Stations 5, 6, and 7 -

| Spike (mg/l) | Ortho P Conc. (mg/l) | Inorganic N Conc. (mg/l) | Maximum yield (mg/l-dry wt.) |
|---|---|---|---|
| Control | 0.005 | 0.738 | 0.2 |
| 0.050 P | 0.055 | 0.738 | 18.0 |
| 0.050 P + 1.0 N | 0.055 | 1.738 | 18.3 |
| 1.0 N | 0.005 | 1.738 | 0.2 |

3). Stations 8 and 9 -

| Spike (mg/l) | Ortho P Conc. (mg/l) | Inorganic N Conc. (mg/l) | Maximum yield (mg/l-dry wt.) |
|---|---|---|---|
| Control | 0.005 | 0.680 | 0.2 |
| 0.050 P | 0.055 | 0.680 | 17.1 |
| 0.050 P + 1.0 N | 0.055 | 1.680 | 19.5 |
| 1.0 N | 0.005 | 1.680 | 0.2 |

2. Discussion -

The control yields of the assay alga, Selenastrum capricornutum, indicate that the potential primary productivity of Flaming Gorge Reservoir was moderate at all stations at the times the samples were collected (05/16/75 and 09/22/75). Also, the significant yield increases in all samples with the addition of phosphorus alone indicates that the reservoir was limited by phosphorus at those times. Note that the addition of nitrogen alone resulted in yields no greater than those of the controls.

The reservoir data indicate phosphorus limitation at all stations except 1 and 2. Following is a tabulation of the mean inorganic nitrogen/orthophosphorus ratios at each of the sampling stations and times with the indicated limiting nutrient in parentheses. Note that those stations nearest the major tributaries and point sources tended toward nitrogen limitation.

| Station | 05/15/75 | 08/07/75 | 09/22/75 |
|---|---|---|---|
| 1 | 5/1 (N) | 16/1 (P) | 7/1 (N) |
| 2 | 5/1 (N) | 22/1 (P) | 23/1 (P) |
| 3 | 19/1 (P) | 38/1 (P) | 48/1 (P) |
| 4 | 330/1 (P) | 69/1 (P) | 98/1 (P) |
| 5 | 563/1 (P) | 100/1 (P) | 261/1 (P) |
| 6 | 459/1 (P) | 142/1 (P) | 162/1 (P) |
| 7 | 465/1 (P) | 141/1 (P) | 113/1 (P) |
| 8 | 380/1 (P) | 154/1 (P) | 190/1 (P) |
| 9 | 336/1 (P) | 127/1 (P) | 183/1 (P) |

## IV. NUTRIENT LOADINGS
(See Appendix E for data)

For the determination of nutrient loadings, the Wyoming National Guard collected monthly near-surface grab samples from each of the tributary sites indicated on the map (page v), except for the high runoff month of May when two samples were collected. Sampling was begun in November, 1974, and was completed in October, 1975.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the Wyoming District Office of the U.S. Geological Survey for the tributary sites nearest the reservoir.

In this report, nutrient loads for sampled tributaries were determined by using a modification of a U.S. Geological Survey computer program for calculating stream loadings*. Nutrient loads shown are those measured minus point-source loads, if any.

The nutrient loads measured in Birch Spring Draw at station E-1 were less than those measured upstream at the Manila wastewater treatment plant, and the background load for this tributary and the nutrient loads for unsampled "minor tributaries and immediate drainage" ("ZZ" of U.S.G.S.) were estimated using the means of the nutrient loads, in $kg/km^2/year$, at stations B-1, C-1, D-1, and H-1 and multiplying the means by the Birch Spring Draw and ZZ areas in $km^2$. Nutrient loads for Unnamed Creek M-1 are included in the minor tributaries loads, since no daily flow was measured at any of the sampling times.

* See Working Paper No. 175.

The operators of the Green River, Manila, and Rock Springs wastewater treatment plants provided monthly effluent samples and corresponding flow data. The operator of the wastewater treatment at the Green River-Upland Addition provided monthly effluent samples; however, corresponding flows were not available, and nutrient loads were estimated at 1.134 kg P and 3.401 kg N/capita/year.

A. Waste Sources:

1. Known municipal* -

| Name | Pop. Served | Treatment | Mean Flow ($m^3/d$) | Receiving Water |
|---|---|---|---|---|
| Green River | 4,000 | stab. pond | 2,581.6 | Green River |
| Rock Springs | 13,000 | tr. filter | 5,506.3 | Bitter Creek |
| Manila | 600 | stab. pond | 770.9 | Birch Spring Draw |
| Green River - Upland Addition | 3,000** | act. sludge | 1,135.5† | Green River |

2. Known industrial - None

* Treatment plant questionnaire.
** Plant will serve approximately 5,000 by the end of 1976; Edwards, 1975.
† Estimated at 0.3785 $m^3$/capita/day.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

| Source | kg P/ yr | % of total |
|---|---|---|
| a. Tributaries (non-point load) - | | |
| Green River | 48,325 | 26.0 |
| Cart Creek | 295 | 0.2 |
| W. Fork Eagle Creek | 45 | <0.1 |
| Upper Marsh Creek | 235 | 0.1 |
| Brick Spring Draw | 250 | 0.1 |
| Henrys Fork | 5,715 | 3.1 |
| Blacks Fork | 74,660 | 40.1 |
| Sage Creek | 1,365 | 0.7 |
| b. Minor tributaries & immediate drainage (non-point load) - | 12,535 | 6.7 |
| c. Known municipal STP's - | | |
| Green River | 13,265 | 7.1 |
| Rock Springs | 22,725 | 12.2 |
| Manila | 1,015 | 0.6 |
| Green River-Upland Addition | 3,400 | 1.8 |
| d. Septic tanks - Unknown | ? | - |
| e. Known industrial - None | - | - |
| f. Direct precipitation* - | 2,410 | 1.3 |
| Total | 186,240 | 100.0 |

2. Outputs -

Reservoir outlet - Green River 24,365

3. Net annual P accumulation - 161,875 kg.

* See Working Paper No. 175.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

| Source | kg N/ yr | % of total |
|---|---|---|
| a. Tributaries (non-point load) - | | |
| Green River | 1,503,505 | 53.2 |
| Cart Creek | 7,255 | 0.3 |
| W. Fork Eagle Creek | 2,285 | <0.1 |
| Upper Marsh Creek | 3,990 | 0.1 |
| Birch Spring Draw | 8,150 | 0.3 |
| Henrys Fork | 70,075 | 2.5 |
| Blacks Fork | 545,250 | 19.3 |
| Sage Creek | 31,580 | 1.1 |
| b. Minor tributaries & immediate drainage (non-point load) - | 410,460 | 14.5 |
| c. Known municipal STP's - | | |
| Green River | 30,530 | 1.1 |
| Rock Springs | 51,560 | 1.8 |
| Manila | 2,960 | 0.1 |
| Green River-Upland Addition | 10,205 | 0.4 |
| d. Septic tanks - Unknown | ? | - |
| e. Known industrial - None | - | - |
| f. Direct precipitation* - | 148,630 | 5.3 |
| Total | 2,826,435 | 100.0 |

2. Outputs -

Reservoir outlet - Green River 2,883,495

3. Net annual N loss - 57,060 kg.

* See Working Paper No. 175.

D. Non-point Nutrient Export by Subdrainage Area:

| Tributary | kg P/km²/yr | kg N/km²/yr | N/P ratio |
|---|---|---|---|
| Green River | 2 | 58 | 29/1 |
| Cart Creek | 4 | 100 | 25/1 |
| W. Fork Eagle Creek | 6 | 286 | 48/1 |
| Upper Marsh Creek | 2 | 34 | 17/1 |
| Henrys Fork | 4 | 52 | 13/1 |
| Blacks Fork | 9 | 68 | 8/1 |
| Sage Creek | 5 | 104 | 21/1 |

E. Mean Nutrient Concentrations in Ungaged Streams:

| Tributary | Mean Total P Conc. (mg/l) | Mean Total N Conc. (mg/l) |
|---|---|---|
| Currant Creek | 0.097 | 1.568 |
| Middle Marsh Creek | 0.081 | 1.528 |
| Spring Creek | 0.958 | 2.462 |
| Unnamed Creek M-1 | 0.018 | 0.843 |

F. Yearly Loads:

In the following table, the existing phosphorus loadings are compared to those proposed by Vollenweider (Vollenweider and Dillon, 1974). Essentially, his "dangerous" loading is one at which the receiving water would become eutrophic or remain eutrophic; his "permissible" loading is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic loading would be considered one between "dangerous" and "permissible".

Note that Vollenweider's model may not be applicable to water bodies with short hydraulic retention times.

| | Total Phosphorus | | Total Nitrogen | |
|---|---|---|---|---|
| | Total | Accumulated | Total | Accumulated |
| grams/$m^2$/yr | 1.35 | 1.18 | 20.5 | loss* |

Vollenweider phosphorus loadings ($g/m^2/yr$) based on mean depth and mean hydraulic retention time of Flaming Gorge Reservoir:

| | |
|---|---|
| "Dangerous" (eutrophic loading) | 0.76 |
| "Permissible" (oligotrophic loading) | 0.38 |

* There was an apparent loss of nitrogen during the sampling year. This may have been due to nitrogen fixation in the reservoir, solubilization of previously sedimented nitrogen, recharge with nitrogen-rich ground water, or unsampled point sources discharging directly to the reservoir. Whatever the cause, a similar nitrogen loss has occurred at Shagawa Lake, Minnesota, which has been intensively studied by EPA's former National Eutrophication and Lake Restoration Branch (Malueg et al., 1975).

## V. LITERATURE REVIEWED

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Malueg, Kenneth W., D. Phillips Larsen, Donald W. Schults, and Howard T. Mercier; 1975. A six-year water, phosphorus, and nitrogen budget for Shagawa Lake, Minnesota. Jour. Environ. Qual., vol. 4, no. 2, pp. 236-242.

Prior, Roy E., 1974. Personal communication (reservoir morphometry). WY Dept. of Env. Qual., Cheyenne.

Vollenweider, R. A., and P. J. Dillon, 1974. The application of the phosphorus loading concept to eutrophication research. Natl. Res. Council of Canada Publ. No. 13690, Canada Centre for Inland Waters, Burlington, Ontario.

# VI. APPENDICES

## APPENDIX A

## LAKE RANKINGS

LAKE DATA TO BE USED IN RANKINGS

| LAKE CODE | LAKE NAME | MEDIAN TOTAL P | MEDIAN INORG N | 500-MEAN SEC | MEAN CHLORA | 15-MIN DO | MEDIAN DISS ORTHO P |
|---|---|---|---|---|---|---|---|
| 5601 | BIG SANDY RESERVOIR | 0.087 | 0.060 | 487.667 | 4.383 | 8.800 | 0.020 |
| 5602 | BOULDER LAKE | 0.004 | 0.040 | 361.800 | 2.483 | 8.400 | 0.002 |
| 5603 | BOYSEN RESERVOIR | 0.037 | 0.140 | 465.923 | 6.264 | 14.400 | 0.014 |
| 5604 | LAKE DE SMET | 0.033 | 0.040 | 409.000 | 11.167 | 9.400 | 0.006 |
| 5605 | FLAMING GORGE RESERVOIR | 0.014 | 0.605 | 366.461 | 5.611 | 12.200 | 0.003 |
| 5606 | FREMONT LAKE | 0.006 | 0.040 | -22.000 | 3.783 | 7.400 | 0.002 |
| 5607 | GLENDO RESERVOIR | 0.045 | 0.315 | 459.182 | 8.473 | 12.600 | 0.014 |
| 5608 | KEY HOLE RESERVOIR | 0.028 | 0.050 | 454.583 | 7.792 | 14.000 | 0.004 |
| 5609 | OCEAN LAKE | 0.043 | 0.040 | 478.333 | 7.500 | 8.600 | 0.004 |
| 5610 | SEMINOLE RESERVOIR | 0.030 | 0.130 | 447.000 | 2.536 | 11.000 | 0.007 |
| 5611 | SODA LAKE | 0.063 | 0.040 | 387.500 | 5.575 | 15.000 | 0.014 |
| 5612 | VIVA NAUGHTON RESERVOIR | 0.065 | 0.120 | 430.000 | 25.067 | 13.200 | 0.024 |
| 5613 | WOODRUFF NARROWS RESERVO | 0.069 | 0.105 | 470.000 | 12.950 | 13.200 | 0.019 |
| 5614 | YELLOWTAIL RESERVOIR | 0.026 | 0.310 | 364.500 | 5.410 | 10.000 | 0.017 |

PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

| LAKE CODE | LAKE NAME | MEDIAN TOTAL P | MEDIAN INORG N | 500-MEAN SEC | MEAN CHLORA | 15-MIN DO | MEDIAN DISS ORTHO P | INDEX NO |
|---|---|---|---|---|---|---|---|---|
| 5601 | BIG SANDY RESERVOIR | 0 ( 0) | 54 ( 7) | 0 ( 0) | 77 ( 10) | 77 ( 10) | 8 ( 1) | 216 |
| 5602 | BOULDER LAKE | 92 ( 12) | 92 ( 11) | 92 ( 12) | 100 ( 13) | 92 ( 12) | 92 ( 12) | 560 |
| 5603 | BOYSEN RESERVOIR | 46 ( 6) | 23 ( 3) | 23 ( 3) | 46 ( 6) | 8 ( 1) | 42 ( 5) | 188 |
| 5604 | LAKE DE SMET | 54 ( 7) | 73 ( 9) | 62 ( 8) | 15 ( 2) | 69 ( 9) | 62 ( 8) | 335 |
| 5605 | FLAMING GORGE RESERVOIR | 85 ( 11) | 0 ( 0) | 77 ( 10) | 54 ( 7) | 46 ( 6) | 85 ( 11) | 347 |
| 5606 | FREMONT LAKE | 100 ( 13) | 73 ( 9) | 100 ( 13) | 85 ( 11) | 100 ( 13) | 100 ( 13) | 558 |
| 5607 | GLENDO RESERVOIR | 31 ( 4) | 8 ( 1) | 31 ( 4) | 23 ( 3) | 38 ( 5) | 42 ( 5) | 173 |
| 5608 | KEY HOLE RESERVOIR | 69 ( 9) | 62 ( 8) | 38 ( 5) | 31 ( 4) | 15 ( 2) | 69 ( 9) | 284 |
| 5609 | OCEAN LAKE | 38 ( 5) | 92 ( 11) | 8 ( 1) | 38 ( 5) | 85 ( 11) | 77 ( 10) | 338 |
| 5610 | SEMINOLE RESERVOIR | 62 ( 8) | 31 ( 4) | 46 ( 6) | 92 ( 12) | 54 ( 7) | 54 ( 7) | 339 |
| 5611 | SODA LAKE | 23 ( 3) | 92 ( 11) | 69 ( 9) | 62 ( 8) | 0 ( 0) | 31 ( 4) | 277 |
| 5612 | VIVA NAUGHTON RESERVOIR | 15 ( 2) | 38 ( 5) | 54 ( 7) | 0 ( 0) | 27 ( 3) | 0 ( 0) | 134 |
| 5613 | WOODRUFF NARROWS RESERVO | 8 ( 1) | 46 ( 6) | 15 ( 2) | 8 ( 1) | 27 ( 3) | 15 ( 2) | 119 |
| 5614 | YELLOWTAIL RESERVOIR | 77 ( 10) | 15 ( 2) | 85 ( 11) | 69 ( 9) | 62 ( 8) | 23 ( 3) | 331 |

LAKES RANKED BY INDEX NOS.

| RANK | LAKE CODE | LAKE NAME | INDEX NO |
|---|---|---|---|
| 1 | 5602 | BOULDER LAKE | 560 |
| 2 | 5606 | FREMONT LAKE | 558 |
| 3 | 5605 | FLAMING GORGE RESERVOIR | 347 |
| 4 | 5610 | SEMINOLE RESERVOIR | 339 |
| 5 | 5609 | OCEAN LAKE | 338 |
| 6 | 5604 | LAKE DE SMET | 335 |
| 7 | 5614 | YELLOWTAIL RESERVOIR | 331 |
| 8 | 5608 | KEY HOLE RESERVOIR | 284 |
| 9 | 5611 | SODA LAKE | 277 |
| 10 | 5601 | BIG SANDY RESERVOIR | 216 |
| 11 | 5603 | BOYSEN RESERVOIR | 188 |
| 12 | 5607 | GLENDO RESERVOIR | 173 |
| 13 | 5612 | VIVA NAUGHTON RESERVOIR | 134 |
| 14 | 5613 | WOODRUFF NARROWS RESERVO | 119 |

# APPENDIX B

## CONVERSION FACTORS

## CONVERSION FACTORS

Hectares x 2.471 = acres

Kilometers x 0.6214 = miles

Meters x 3.281 = feet

Cubic meters x $8.107 \times 10^{-4}$ = acre/feet

Square kilometers x 0.3861 = square miles

Cubic meters/sec x 35.315 = cubic feet/sec

Centimeters x 0.3937 = inches

Kilograms x 2.205 = pounds

Kilograms/square kilometer x 5.711 = lbs/square mile

# APPENDIX C

## TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR WYOMING 08/05/76

LAKE CODE 5605 FLAMING GORGE

TOTAL DRAINAGE AREA OF LAKE(SQ KM) 39109.0

| TRIBUTARY | SUB-DRAINAGE AREA(SQ KM) | NORMALIZED FLOWS(CMS) JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5605A1 | 39109.0 | 64.85 | 61.16 | 40.21 | 46.44 | 62.01 | 66.54 | 72.21 | 77.59 | 65.70 | 62.58 | 66.54 | 71.92 | 63.18 |
| 5605A2 | 25900.0 | 15.72 | 19.23 | 26.82 | 47.71 | 79.34 | 158.43 | 92.65 | 42.59 | 35.68 | 25.37 | 21.27 | 15.43 | 48.40 |
| 5605B1 | 72.5 | 0.085 | 0.085 | 0.085 | 0.113 | 0.680 | 1.784 | 0.878 | 0.453 | 0.283 | 0.170 | 0.113 | 0.085 | 0.402 |
| 5605C1 | 8.0 | 0.017 | 0.017 | 0.017 | 0.025 | 0.142 | 0.396 | 0.198 | 0.113 | 0.057 | 0.028 | 0.023 | 0.020 | 0.088 |
| 5605D1 | 116.5 | 0.057 | 0.057 | 0.057 | 0.057 | 0.085 | 0.085 | 0.085 | 0.170 | 0.085 | 0.057 | 0.057 | 0.057 | 0.076 |
| 5605E1 | 62.2 | 0.057 | 0.057 | 0.085 | 0.142 | 0.396 | 0.340 | 0.085 | 0.057 | 0.057 | 0.085 | 0.085 | 0.085 | 0.128 |
| 5605F1 | 1346.8 | 1.13 | 1.25 | 1.98 | 2.55 | 4.33 | 7.99 | 2.52 | 1.50 | 1.02 | 1.27 | 1.47 | 1.27 | 2.36 |
| 5605G1 | 8029.0 | 2.55 | 3.06 | 8.10 | 18.86 | 32.76 | 39.50 | 9.29 | 2.94 | 2.35 | 2.18 | 2.46 | 1.90 | 10.50 |
| 5605H1 | 303.0 | 0.17 | 0.34 | 0.34 | 0.34 | 0.42 | 0.57 | 0.42 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.28 |
| 5605M1 | 18.9 | 0.0 | 0.0 | 0.006 | 0.071 | 0.113 | 0.042 | 0.003 | 0.0 | 0.0 | 0.003 | 0.003 | 0.0 | 0.020 |
| 5605ZZ | 3418.8 | 0.28 | 0.48 | 0.71 | 0.71 | 0.71 | 0.99 | 0.71 | 0.42 | 0.14 | 0.14 | 0.28 | 0.42 | 0.50 |

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 39109.0
SUM OF SUB-DRAINAGE AREAS = 39275.8

TOTAL FLOW IN = 752.32
TOTAL FLOW OUT = 757.76

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

| TRIBUTARY | MONTH | YEAR | MEAN FLOW | DAY | FLOW | DAY | FLOW | DAY | FLOW |
|---|---|---|---|---|---|---|---|---|---|
| 5605A1 | 11 | 74 | 70.113 | 12 | 65.412 | | | | |
| | 12 | 74 | 68.300 | 13 | 67.394 | | | | |
| | 1 | 75 | 71.047 | 14 | 72.208 | | | | |
| | 2 | 75 | 83.280 | 6 | 86.366 | | | | |
| | 3 | 75 | 45.250 | 5 | 61.731 | | | | |
| | 4 | 75 | 29.619 | 11 | 24.522 | | | | |
| | 5 | 75 | 40.776 | 16 | 24.437 | | | | |
| | 6 | 75 | 97.806 | 26 | 119.497 | | | | |
| | 7 | 75 | 122.442 | 28 | 129.125 | | | | |
| | 8 | 75 | 91.124 | 14 | 93.729 | | | | |
| | 9 | 75 | 44.769 | 24 | 63.430 | | | | |
| | 10 | 75 | 40.578 | 17 | 33.131 | | | | |
| 5605A2 | 10 | 74 | 26.306 | 5 | 27.977 | | | | |
| | 11 | 74 | 25.598 | 8 | 24.013 | | | | |
| | 12 | 74 | 27.128 | 7 | 26.901 | | | | |
| | 1 | 75 | 28.458 | 5 | 28.034 | | | | |
| | 2 | 75 | 29.110 | 9 | 29.166 | | | | |
| | 3 | 75 | 28.685 | 9 | 28.883 | | | | |
| | 4 | 75 | 33.102 | 6 | 28.600 | | | | |
| | 5 | 75 | 57.568 | 10 | 52.669 | | | | |
| | 6 | 75 | 140.933 | 6 | 73.057 | | | | |
| | 7 | 75 | 151.042 | 3 | 173.582 | | | | |
| | 8 | 75 | 60.966 | 8 | 76.455 | | | | |
| | 9 | 75 | 28.543 | 8 | 35.396 | | | | |

TRIBUTARY FLOW INFORMATION FOR WYOMING 08/05/76

LAKE CODE 560S FLAMING GORGE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

| TRIBUTARY | MONTH | YEAR | MEAN FLOW | DAY | FLOW | DAY | FLOW | DAY | FLOW |
|---|---|---|---|---|---|---|---|---|---|
| 560581 | 11 | 74 | 0.113 | 12 | 0.057 | | | | |
| | 12 | 74 | 0.085 | 12 | 0.170 | | | | |
| | 1 | 75 | 0.057 | | | | | | |
| | 2 | 75 | 0.057 | | | | | | |
| | 3 | 75 | 0.057 | | | | | | |
| | 4 | 75 | 0.057 | | | | | | |
| | 5 | 75 | 1.841 | | | | | | |
| | 6 | 75 | 2.690 | 2 | 3.398 | | | | |
| | 7 | 75 | 0.538 | 28 | 0.170 | | | | |
| | 8 | 75 | 0.113 | 12 | 0.113 | | | | |
| | 9 | 75 | 0.040 | 22 | 0.028 | | | | |
| | 10 | 75 | 0.037 | 17 | 0.042 | | | | |
| 5605C1 | 11 | 74 | 0.014 | 12 | 0.008 | | | | |
| | 12 | 74 | 0.008 | 12 | 0.014 | | | | |
| | 1 | 75 | 0.003 | 17 | 0.003 | | | | |
| | 2 | 75 | 0.003 | 7 | 0.003 | | | | |
| | 3 | 75 | 0.006 | | | | | | |
| | 4 | 75 | 0.028 | | | | | | |
| | 5 | 75 | 0.113 | | | | | | |
| | 6 | 75 | 0.793 | 2 | 0.453 | | | | |
| | 7 | 75 | 0.198 | 28 | 0.085 | | | | |
| | 8 | 75 | 0.037 | 12 | 0.042 | | | | |
| | 9 | 75 | 0.017 | 22 | 0.014 | | | | |
| | 10 | 75 | 0.014 | 17 | 0.014 | | | | |
| 5605D1 | 10 | 74 | 0.057 | 5 | 0.057 | | | | |
| | 11 | 74 | 0.057 | 8 | 0.057 | | | | |
| | 12 | 74 | 0.057 | 7 | 0.057 | | | | |
| | 1 | 75 | 0.057 | 5 | 0.057 | | | | |
| | 2 | 75 | 0.085 | 9 | 0.085 | | | | |
| | 3 | 75 | 0.057 | 9 | 0.057 | | | | |
| | 4 | 75 | 0.057 | 6 | 0.057 | | | | |
| | 5 | 75 | 0.057 | 10 | 0.057 | 24 | 0.057 | | |
| | 6 | 75 | 0.057 | 6 | 0.057 | | | | |
| | 7 | 75 | 0.057 | 3 | 0.057 | | | | |
| | 8 | 75 | 0.142 | 12 | 0.170 | | | | |
| | 9 | 75 | 0.142 | 8 | 0.142 | | | | |
| 5605E1 | 11 | 74 | 0.142 | 12 | 0.170 | | | | |
| | 12 | 74 | 0.028 | 10 | 0.028 | | | | |
| | 1 | 75 | 0.028 | 17 | 0.028 | | | | |
| | 2 | 75 | 0.023 | 7 | 0.023 | | | | |
| | 3 | 75 | 0.017 | 7 | 0.020 | | | | |
| | 4 | 75 | 0.014 | 11 | 0.014 | | | | |
| | 5 | 75 | 0.014 | 16 | 0.011 | | | | |
| | 6 | 75 | 0.170 | 26 | 0.311 | | | | |
| | 7 | 75 | 0.481 | 28 | 0.453 | | | | |
| | 8 | 75 | 0.396 | 12 | 0.396 | | | | |
| | 9 | 75 | 0.368 | 23 | 0.368 | | | | |
| | 10 | 75 | 0.142 | 17 | 0.113 | | | | |

TRIBUTARY FLOW INFORMATION FOR WYOMING 08/05/76

LAKE CODE 5605 FLAMING GORGE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

| TRIBUTARY | MONTH | YEAR | MEAN FLOW | DAY | FLOW | DAY | FLOW | DAY | FLOW |
|---|---|---|---|---|---|---|---|---|---|
| 5605F1 | 10 | 74 | 0.396 | 5 | 0.170 | | | | |
| | 11 | 74 | 1.048 | 8 | 0.765 | | | | |
| | 12 | 74 | 1.331 | 7 | 1.586 | | | | |
| | 1 | 75 | 0.906 | 5 | 0.906 | | | | |
| | 2 | 75 | 0.963 | 9 | 0.991 | | | | |
| | 3 | 75 | 1.614 | 9 | 1.784 | | | | |
| | 4 | 75 | 1.557 | 6 | 1.784 | | | | |
| | 5 | 75 | 4.417 | 10 | 1.586 | 24 | 1.699 | | |
| | 6 | 75 | 18.236 | 6 | 10.307 | | | | |
| | 7 | 75 | 19.907 | 3 | 28.600 | | | | |
| | 8 | 75 | 2.350 | 8 | 2.180 | | | | |
| | 9 | 75 | 0.595 | 8 | 0.255 | | | | |
| 5605G1 | 10 | 74 | 1.331 | 5 | 0.963 | | | | |
| | 11 | 74 | 1.982 | 8 | 2.180 | | | | |
| | 12 | 74 | 1.982 | 7 | 2.492 | | | | |
| | 1 | 75 | 1.982 | 5 | 6.654 | | | | |
| | 2 | 75 | 2.265 | 9 | 12.233 | | | | |
| | 3 | 75 | 2.832 | 9 | 18.406 | | | | |
| | 4 | 75 | 5.947 | 6 | 6.201 | | | | |
| | 5 | 75 | 25.202 | 10 | 10.194 | 24 | 63.147 | | |
| | 6 | 75 | 51.537 | 6 | 32.281 | | | | |
| | 7 | 75 | 38.228 | 3 | 30.299 | | | | |
| | 8 | 75 | 5.947 | 8 | 7.334 | | | | |
| | 9 | 75 | 1.841 | 8 | 1.529 | | | | |
| 5605M1 | 10 | 74 | 0.113 | 5 | 0.113 | | | | |
| | 11 | 74 | 0.142 | 8 | 0.142 | | | | |
| | 12 | 74 | 0.170 | 7 | 0.170 | | | | |
| | 1 | 75 | 0.142 | 5 | 0.142 | | | | |
| | 2 | 75 | 0.283 | 9 | 0.283 | | | | |
| | 3 | 75 | 0.425 | 9 | 0.396 | | | | |
| | 4 | 75 | 0.283 | 6 | 0.227 | | | | |
| | 5 | 75 | 0.368 | 10 | 0.283 | 25 | 0.368 | | |
| | 6 | 75 | 0.425 | 6 | 0.453 | | | | |
| | 7 | 75 | 0.283 | 3 | 0.283 | | | | |
| | 8 | 75 | 0.170 | 8 | 0.170 | | | | |
| | 9 | 75 | 0.142 | 8 | 0.283 | | | | |
| 5605N1 | 11 | 74 | 0.003 | | | | | | |
| | 12 | 74 | 0.003 | | | | | | |
| | 1 | 75 | 0.0 | | | | | | |
| | 2 | 75 | 0.003 | | | | | | |
| | 3 | 75 | 0.0 | | | | | | |
| | 4 | 75 | 0.057 | | | | | | |
| | 5 | 75 | 0.113 | | | | | | |
| | 6 | 75 | 0.085 | | | | | | |
| | 7 | 75 | 0.006 | | | | | | |
| | 8 | 75 | 0.003 | | | | | | |
| | 9 | 75 | 0.003 | | | | | | |
| | 10 | 75 | 0.003 | | | | | | |

TRIBUTARY FLOW INFORMATION FOR WYOMING 04/05/76

LAKE CODE 5605 FLAMING GORGE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

| TRIBUTARY | MONTH | YEAR | MEAN FLOW | DAY | FLOW | DAY | FLOW | DAY | FLOW |
|---|---|---|---|---|---|---|---|---|---|
| 560522 | 10 | 74 | 0.142 | | | | | | |
| | 11 | 74 | 0.283 | | | | | | |
| | 12 | 74 | 0.425 | | | | | | |
| | 1 | 75 | 0.283 | | | | | | |
| | 2 | 75 | 0.425 | | | | | | |
| | 3 | 75 | 0.850 | | | | | | |
| | 4 | 75 | 0.566 | | | | | | |
| | 5 | 75 | 0.850 | | | | | | |
| | 6 | 75 | 0.850 | | | | | | |
| | 7 | 75 | 0.566 | | | | | | |
| | 8 | 75 | 0.283 | | | | | | |
| | 9 | 75 | 0.142 | | | | | | |

# APPENDIX D

## PHYSICAL and CHEMICAL DATA

STORET RETRIEVAL DATE 76/08/05

560501
41 24 20.0 109 25 00.0 3
FLAMING GORGE RESERVOIR
56037 WYOMING
110691

11EPALES 2111202
0010 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/15 | 15 15 | 0000 | 14.2 | 7.6 | 12 | 499 | 8.50 | 157 | 0.060 | 0.800 | 0.040 | 0.019 |
| | 15 15 | 0006 | 13.4 | 7.4 | | 491 | 8.50 | 157 | 0.040 | 0.400 | 0.040 | 0.018 |
| 75/08/07 | 14 20 | 0000 | 19.9 | 6.6 | 48 | 397 | 8.50 | 121 | 0.060 | 0.300 | 0.030 | 0.006 |
| | 14 20 | 0005 | 19.5 | 7.4 | | 391 | 8.50 | 123 | 0.070 | 0.400 | 0.020K | 0.008 |
| | 14 20 | 0015 | 19.2 | 7.0 | | 390 | 8.65 | 123 | 0.130 | 0.200 | 0.020K | 0.006 |
| 75/09/22 | 09 45 | 0000 | 16.0 | 7.1 | 24 | 468 | 8.30 | 142 | 0.050 | 0.800 | 0.030 | 0.011 |
| | 09 45 | 0005 | 16.0 | 7.6 | | 466 | 8.50 | 141 | 0.030 | 0.400 | 0.020 | 0.006 |

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/15 | 15 15 | 0000 | 0.088 | 4.5 | |
| | 15 15 | 0006 | 0.105 | | |
| 75/08/07 | 14 20 | 0000 | 0.038 | 12.0 | |
| | 14 20 | 0005 | 0.039 | | |
| | 14 20 | 0015 | 0.049 | | |
| 75/09/22 | 09 45 | 0000 | 0.058 | 12.3 | |
| | 09 45 | 0005 | 0.047 | | |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560502
41 21 32.0 109 36 06.0 3
FLAMING GORGE RESERVOIR
56037 WYOMING

11EPALES 2111202
0007 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/15 | 15 50 | 0000 | 14.6 | 7.8 | 11 | 723 | 8.50 | 274 | 0.030 | 0.500 | 0.020 | 0.012 |
| | 15 50 | 0005 | 13.4 | 7.6 | | 721 | 8.45 | 294 | 0.040 | 0.500 | 0.030 | 0.014 |
| 75/08/07 | 14 45 | 0000 | 20.9 | 7.3 | 84 | 1010 | 8.75 | 186 | 0.180 | 0.500 | 0.020K | 0.006 |
| | 14 45 | 0005 | 20.5 | 6.8 | | 1098 | 8.70 | 191 | 0.100 | 0.500 | 0.020K | 0.006 |
| | 14 45 | 0020 | 20.3 | 6.4 | | 1316 | 8.80 | 187 | 0.060 | 0.500 | 0.020K | 0.007 |
| 75/09/22 | 10 10 | 0000 | 17.5 | 7.6 | 24 | 596 | 8.50 | 161 | 0.040 | 0.500 | 0.120 | 0.004 |
| | 10 10 | 0005 | 17.5 | 7.2 | | 593 | 8.50 | 160 | 0.030 | 0.500 | 0.130 | 0.010 |

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/15 | 15 50 | 0000 | 0.107 | 13.2 | |
| | 15 50 | 0005 | 0.193 | | |
| 75/08/07 | 14 45 | 0000 | 0.030 | 4.8 | |
| | 14 45 | 0005 | 0.029 | | |
| | 14 45 | 0020 | 0.049 | | |
| 75/09/22 | 10 10 | 0000 | 0.033 | 6.9 | |
| | 10 10 | 0005 | 0.033 | | |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560503
41 17 32.0 109 31 52.0 3
FLAMING GORGE RESERVOIR
56037 WYOMING

11EPALES 2111202
0065 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/15 | 16 20 | 0000 | 11.4 | 10.2 | 42 | 567 | 8.85 | 164 | 0.030 | 0.600 | 0.020K | 0.014 |
| | 16 20 | 0005 | 11.1 | 12.0 | | 569 | 8.85 | 163 | 0.020 | 0.400 | 0.020K | 0.008 |
| | 16 20 | 0020 | 6.7 | 10.8 | | 514 | 8.70 | 162 | 0.030 | 0.400 | 0.270 | 0.007 |
| | 16 20 | 0040 | 6.1 | 10.2 | | 530 | 8.65 | 164 | 0.030 | 0.400 | 0.190 | 0.007 |
| | 16 20 | 0061 | 6.7 | 11.0 | | 573 | 8.85 | 163 | 0.030 | 0.400 | 0.210 | 0.007 |
| 75/08/08 | 13 40 | 0000 | 20.8 | 6.4 | 90 | 385 | 8.80 | 139 | 0.020 | 0.400 | 0.050 | 0.006 |
| | 13 40 | 0005 | 20.5 | 6.2 | | 405 | 8.70 | 143 | 0.020 | 0.400 | 0.060 | 0.005 |
| | 13 40 | 0015 | 20.2 | 6.2 | | 407 | 8.80 | 142 | 0.020 | 0.400 | 0.070 | 0.005 |
| | 13 40 | 0030 | 15.9 | 4.4 | | 517 | 8.40 | 158 | 0.020K | 0.300 | 0.300 | 0.008 |
| | 13 40 | 0055 | 12.7 | 4.8 | | 542 | 8.40 | 168 | 0.020 | 0.300 | 0.530 | 0.009 |
| | 13 40 | 0076 | 10.9 | 4.5 | | 560 | 8.50 | 170 | 0.020K | 0.200 | 0.700 | 0.015 |
| 75/09/22 | 10 20 | 0000 | 17.6 | 8.8 | 60 | 449 | 8.55 | 165 | 0.030 | 0.500 | 0.130 | 0.004 |
| | 10 20 | 0005 | 17.5 | 7.2 | | 448 | 8.60 | 147 | 0.020K | 0.400 | 0.120 | 0.003 |
| | 10 20 | 0015 | 17.5 | 6.9 | | 449 | 8.60 | 155 | 0.020K | 0.300 | 0.340 | 0.008 |
| | 10 20 | 0030 | 17.4 | 6.2 | | 448 | 8.10 | 155 | 0.020K | 0.300 | 0.340 | 0.008 |
| | 10 20 | 0067 | 15.2 | 2.8 | | 576 | 8.00 | 167 | 0.020K | 0.300 | 0.650 | 0.011 |

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/15 | 16 20 | 0000 | 0.044 | 10.6 | |
| | 16 20 | 0005 | 0.041 | | |
| | 16 20 | 0020 | 0.028 | | |
| | 16 20 | 0040 | 0.032 | | |
| | 16 20 | 0061 | 0.036 | | |
| 75/08/08 | 13 40 | 0000 | 0.034 | 5.9 | |
| | 13 40 | 0005 | 0.030 | | |
| | 13 40 | 0015 | 0.029 | | |
| | 13 40 | 0030 | 0.033 | | |
| | 13 40 | 0055 | 0.028 | | |
| | 13 40 | 0076 | 0.037 | | |
| 75/09/22 | 10 20 | 0000 | 0.038 | 16.9 | |
| | 10 20 | 0005 | 0.032 | | |
| | 10 20 | 0015 | 0.032 | | |
| | 10 20 | 0030 | 0.032 | | |
| | 10 20 | 0067 | 0.037 | | |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560504
41 13 22.0 109 34 48.0 3
FLAMING GORGE RESERVOIR
56037 WYOMING
110691

11EPALES 2111202
0100 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/16 | 09 05 | 0000 | 8.2 | 10.0 | 156 | 530 | 8.50 | 170 | 0.040 | 0.500 | 0.570 | 0.003 |
| | 09 05 | 0005 | 7.3 | 10.2 | | 518 | 8.50 | 169 | 0.030 | 0.400 | 0.610 | 0.002K |
| | 09 05 | 0020 | 5.3 | 10.0 | | 488 | 8.50 | 168 | 0.030 | 0.400 | 0.640 | 0.002K |
| | 09 05 | 0050 | 5.1 | 9.9 | | 489 | 8.50 | 170 | 0.030 | 0.400 | 0.630 | 0.002K |
| | 09 05 | 0075 | 5.1 | 9.7 | | 529 | 8.50 | 169 | 0.040 | 0.400 | 0.640 | 0.002 |
| | 09 05 | 0096 | 5.1 | 10.0 | | 542 | 8.60 | 159 | 0.050 | 0.400 | 0.650 | 0.003 |
| 75/08/05 | 14 00 | 0000 | 21.6 | 7.0 | 9 | 472 | 8.70 | 152 | 0.020 | 0.300 | 0.090 | 0.004 |
| | 14 00 | 0005 | | 6.6 | | 460 | 8.70 | 152 | 0.020 | 0.300 | 0.060 | 0.003 |
| | 14 00 | 0018 | 19.4 | 8.0 | | 457 | 8.60 | 158 | 0.030 | 0.300 | 0.140 | 0.003 |
| | 14 00 | 0035 | 18.4 | 7.6 | | 479 | 8.70 | 156 | 0.030 | 0.300 | 0.150 | 0.002 |
| | 14 00 | 0054 | 12.7 | 6.2 | | 540 | 8.50 | 170 | 0.030 | 0.300 | 0.470 | 0.002 |
| 75/09/22 | 11 30 | 0000 | 17.8 | 5.2 | 180 | 493 | 8.45 | 155 | 0.020K | 0.300 | 0.220 | 0.002 |
| | 11 30 | 0005 | 17.7 | 6.8 | | 490 | 8.50 | 155 | 0.020K | 0.300 | 0.210 | 0.002K |
| | 11 30 | 0017 | 17.6 | 7.0 | | 489 | 8.50 | 156 | 0.020K | 0.400 | 0.210 | 0.002K |
| | 11 30 | 0040 | 1 .6 | 6.5 | | 488 | 8.10 | 163 | 0.020K | 0.300 | 0.500 | 0.002K |
| | 11 30 | 0067 | 14.7 | 4.4 | | 556 | 8.50 | 157 | 0.030 | 0.300 | 0.220 | 0.005 |

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/16 | 09 05 | 0000 | 0.020 | 5.4 | |
| | 09 05 | 0005 | 0.024 | | |
| | 09 05 | 0020 | 0.024 | | |
| | 09 05 | 0050 | 0.018 | | |
| | 09 05 | 0075 | 0.054 | | |
| | 09 05 | 0096 | 0.091 | | |
| 75/08/05 | 14 00 | 0000 | 0.022 | 3.9 | |
| | 14 00 | 0005 | 0.021 | | |
| | 14 00 | 0018 | 0.020 | | |
| | 14 00 | 0035 | 0.021 | | |
| | 14 00 | 0054 | 0.019 | | |
| 75/09/22 | 11 30 | 0000 | 0.020 | 3.3 | |
| | 11 30 | 0005 | 0.020 | | |
| | 11 30 | 0017 | 0.021 | | |
| | 11 30 | 0040 | 0.021 | | |
| | 11 30 | 0067 | 0.019 | | |

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560505
41 05 07.0 109 32 58.0 3
FLAMING GORGE RESERVOIR
56037 WYOMING

110691

11EPALES 2111202
0089 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/16 | 09 45 | 0000 | 8.8 | 10.0 | 186 | 553 | 8.50 | 160 | 0.030 | 0.500 | 0.950 | 0.002 |
| | 09 45 | 0005 | 8.3 | 10.0 | | 546 | 8.50 | 160 | 0.030 | 0.400 | 0.940 | 0.002K |
| | 09 45 | 0020 | 5.8 | 10.2 | | 512 | 8.50 | 160 | 0.020 | 0.400 | 0.960 | 0.002K |
| | 09 45 | 0050 | 5.2 | 10.2 | | 500 | 8.50 | 160 | 0.020 | 0.400 | 0.990 | 0.002K |
| | 09 45 | 0070 | 5.0 | 9.8 | | 501 | 8.50 | 162 | 0.030 | 0.400 | 1.330 | 0.003 |
| | 09 45 | 0085 | 4.9 | 9.8 | | 499 | 8.50 | 163 | 0.020 | 0.400 | 1.430 | 0.002K |
| 75/08/08 | 14 30 | 0000 | 22.2 | 6.8 | 132 | 553 | 8.70 | 159 | 0.020 | 0.300 | 0.170 | 0.002 |
| | 14 30 | 0005 | 21.2 | 6.8 | | 528 | 8.90 | 150 | 0.030 | 0.300 | 0.140 | 0.004 |
| | 14 30 | 0019 | 20.9 | 6.4 | | 524 | 8.80 | 147 | 0.060 | 0.300 | 0.180 | 0.004 |
| | 14 30 | 0045 | 15.6 | 6.0 | | 610 | 8.50 | 159 | 0.040 | 0.400 | 0.590 | 0.004 |
| | 14 30 | 0085 | 11.3 | 6.8 | | 578 | 8.30 | 159 | 0.020 | 0.300 | 0.830 | 0.010 |
| | 14 30 | 0120 | 8.7 | 4.4 | | 551 | 8.60 | 161 | 0.030 | 0.300 | 1.300 | 0.010 |
| | 14 30 | 0160 | 7.4 | 6.8 | | 552 | 8.30 | 169 | 0.020K | 0.300 | 0.600 | 0.011 |
| 75/09/22 | 11 50 | 0000 | 18.4 | 7.0 | 56 | 537 | 8.50 | 158 | 0.020 | 0.300 | 0.310 | 0.002K |
| | 11 50 | 0005 | 18.3 | 6.8 | | 537 | 8.50 | 157 | 0.020K | 0.300 | 0.340 | 0.002K |
| | 11 50 | 0021 | 18.2 | 6.6 | | 535 | 8.50 | 161 | 0.020K | 0.200 | 0.350 | 0.002 |
| | 11 50 | 0050 | 18.0 | 6.6 | | 545 | 8.20 | 165 | 0.020K | 0.200 | 0.790 | 0.003 |
| | 11 50 | 0085 | 14.1 | 4.8 | | 584 | 8.10 | 168 | 0.020K | 0.200 | 1.460 | 0.004 |
| | 11 50 | 0120 | 12.3 | 5.0 | | 575 | 8.40 | 169 | 0.020K | 0.200 | 1.320 | 0.006 |

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/16 | 09 45 | 0000 | 0.018 | 2.6 | |
| | 09 45 | 0005 | 0.020 | | |
| | 09 45 | 0020 | 0.021 | | |
| | 09 45 | 0050 | 0.021 | | |
| | 09 45 | 0070 | 0.020 | | |
| | 09 45 | 0085 | 0.016 | | |
| 75/08/08 | 14 30 | 0000 | 0.020 | 3.2 | |
| | 14 30 | 0005 | 0.014 | | |
| | 14 30 | 0019 | 0.015 | | |
| | 14 30 | 0045 | 0.014 | | |
| | 14 30 | 0085 | 0.010 | | |
| | 14 30 | 0120 | 0.018 | | |
| | 14 30 | 0160 | 0.019 | | |
| 75/09/22 | 11 50 | 0000 | 0.021 | 16.0 | |
| | 11 50 | 0005 | 0.019 | | |
| | 11 50 | 0021 | 0.021 | | |
| | 11 50 | 0050 | 0.019 | | |
| | 11 50 | 0085 | 0.019 | | |
| | 11 50 | 0120 | 0.013 | | |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560506
40 59 18.0 109 37 15.0 3
FLAMING GORGE RESERVOIR
49009 WYOMING
110691

11EPALES 2111202
00760 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/16 | 10 10 | 0000 | 7.0 | 10.6 | 96 | 544 | 8.50 | 165 | 0.020K | 0.400 | 0.880 | 0.002K |
| | 10 10 | 0005 | 6.8 | 10.0 | | 542 | 8.50 | 164 | 0.020 | 0.400 | 0.880 | 0.002K |
| | 10 10 | 0020 | 5.4 | 10.2 | | 515 | 8.45 | 163 | 0.020 | 0.400 | 0.910 | 0.002K |
| | 10 10 | 0035 | 4.9 | 10.0 | | 504 | 8.50 | 162 | 0.020 | 0.400 | 0.900 | 0.002K |
| | 10 10 | 0050 | 4.7 | 9.8 | | 503 | 8.50 | 164 | 0.020 | 0.400 | 0.910 | 0.002K |
| | 10 10 | 0072 | 4.7 | 9.8 | | 510 | 8.50 | 165 | 0.020 | 0.400 | 0.910 | 0.002 |
| 75/08/08 | 15 05 | 0000 | 22.0 | 7.4 | | 678 | 8.80 | 164 | 0.020K | 0.300 | 0.420 | 0.004 |
| | 15 05 | 0005 | 21.4 | 7.6 | | 670 | 8.90 | 163 | 0.020K | 0.300 | 0.440 | 0.006 |
| | 15 05 | 0019 | 20.8 | 6.8 | | 664 | 8.90 | 164 | 0.030 | 0.300 | 0.470 | 0.003 |
| | 15 05 | 0045 | 18.6 | 5.6 | | 675 | 8.40 | 166 | 0.060 | 0.300 | 0.640 | 0.002 |
| | 15 05 | 0068 | 13.4 | 5.6 | | 595 | 8.70 | 164 | 0.060 | 0.300 | 0.670 | 0.003 |
| 75/09/22 | 14 00 | 0000 | 18.5 | 7.2 | 180 | 606 | 8.45 | 158 | 0.020K | 0.200 | 0.420 | 0.005 |
| | 14 00 | 0005 | 18.1 | 7.1 | | 604 | 8.50 | 160 | 0.020 | 0.300 | 0.420 | 0.003 |
| | 14 00 | 0015 | 18.1 | 7.2 | | 608 | 8.50 | 161 | 0.020 | 0.300 | 0.420 | 0.002K |
| | 14 00 | 0030 | 17.9 | 7.1 | | 607 | 8.55 | 162 | 0.020K | 0.300 | 0.430 | 0.002K |
| | 14 00 | 0050 | 1..9 | 7.1 | | 606 | 8.50 | 161 | 0.020K | 0.300 | 0.430 | 0.002K |
| | 14 00 | 0072 | 14.3 | 5.0 | | 589 | 8.20 | 162 | 0.020K | 0.300 | 0.680 | 0.002K |

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/16 | 10 10 | 0000 | 0.014 | 2.7 | |
| | 10 10 | 0005 | 0.014 | | |
| | 10 10 | 0020 | 0.013 | | |
| | 10 10 | 0035 | 0.012 | | |
| | 10 10 | 0050 | 0.012 | | |
| | 10 10 | 0072 | 0.015 | | |
| 75/08/08 | 15 05 | 0000 | 0.011 | 2.7 | |
| | 15 05 | 0005 | 0.016 | | |
| | 15 05 | 0019 | 0.015 | | |
| | 15 05 | 0045 | 0.016 | | |
| | 15 05 | 0068 | 0.013 | | |
| 75/09/22 | 14 00 | 0000 | 0.009 | 3.1 | |
| | 14 00 | 0005 | 0.012 | | |
| | 14 00 | 0015 | 0.011 | | |
| | 14 00 | 0030 | 0.015 | | |
| | 14 00 | 0050 | 0.011 | | |
| | 14 00 | 0072 | 0.009 | | |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560507
40 57 42.0 109 35 17.0 3
FLAMING GORGE RESERVOIR
49009 WYOMING

110691

11EPALES 2111202
0180 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/16 | 10 30 | 0000 | 8.4 | 9.9 | 186 | 558 | 8.50 | 162 | 0.030 | 0.500 | 0.810 | 0.002 |
| | 10 30 | 0005 | 8.2 | 10.0 | | 556 | 8.50 | 164 | 0.030 | 0.400 | 0.930 | 0.002 |
| | 10 30 | 0025 | 5.6 | 10.0 | | 512 | 8.50 | 164 | 0.020 | 0.400 | 0.900 | 0.002K |
| | 10 30 | 0050 | 4.8 | 9.8 | | 500 | 8.50 | 164 | 0.020 | 0.400 | 0.920 | 0.002K |
| | 10 30 | 0075 | 4.6 | 10.0 | | 500 | 8.50 | 166 | 0.020 | 0.400 | 0.920 | 0.002K |
| | 10 30 | 0100 | 4.4 | 10.0 | | 503 | 8.50 | 165 | 0.020 | 0.400 | 0.910 | 0.002 |
| | 10 30 | 0135 | 4.5 | 9.8 | | 508 | 8.40 | 167 | 0.030 | 0.400 | 0.910 | 0.002 |
| | 10 30 | 0176 | 4.3 | 9.8 | | 508 | 8.40 | 166 | 0.030 | 0.400 | 0.940 | 0.002 |
| 75/08/08 | 15 35 | 0000 | 22.1 | 6.6 | 180 | 680 | 9.00 | 159 | 0.020K | 0.200 | 0.460 | 0.006 |
| | 15 35 | 0005 | 22.0 | 4.8 | | 678 | 8.80 | 157 | 0.020 | 0.300 | 0.460 | 0.004 |
| | 15 35 | 0025 | 21.2 | 6.4 | | 664 | 9.00 | 155 | 0.020K | 0.300 | 0.460 | 0.004 |
| | 15 35 | 0055 | 13.8 | 7.2 | | 593 | 8.60 | 158 | 0.020K | 0.300 | 0.780 | 0.004 |
| | 15 35 | 0095 | 10.3 | 7.2 | | 561 | 8.50 | 159 | 0.030 | 0.300 | 0.800 | 0.004 |
| | 15 35 | 0135 | 7.5 | 6.6 | | 534 | 8.40 | 161 | 0.030 | 0.200K | 0.920 | 0.005 |
| | 15 35 | 0175 | 5.8 | 7.2 | | 525 | 8.40 | 163 | 0.020 | 0.200 | 0.910 | 0.007 |
| 75/09/22 | 14 25 | 0000 | 18.7 | 7.3 | 216 | 612 | 8.55 | 159 | 0.020K | 0.400 | 0.420 | 0.002K |
| | 14 25 | 0005 | 18.7 | 7.2 | | 606 | 8.60 | 161 | 0.020K | 0.300 | 0.420 | 0.003 |
| | 14 25 | 0025 | 18.4 | 7.2 | | 600 | 8.55 | 160 | 0.020K | 0.300 | 0.420 | 0.002 |
| | 14 25 | 0065 | 15.4 | 5.0 | | 536 | 8.20 | 151 | 0.020K | 0.300 | 0.680 | 0.002K |
| | 14 25 | 0100 | 12.7 | 5.8 | | 552 | 8.10 | 163 | 0.020K | 0.300 | 0.840 | 0.003 |
| | 14 25 | 0145 | 10.7 | 5.8 | | 529 | 8.00 | 163 | 0.020K | 0.400 | 0.920 | 0.011 |
| | 14 25 | 0190 | 10.4 | 5.5 | | 525 | 8.00 | 165 | 0.020K | 0.400 | 0.900 | 0.016 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560507
40 57 42.0 109 35 17.0 3
FLAMING GORGE RESERVOIR
49009 WYOMING

110691

11EPALES 2111202
0180 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/16 | 10 30 | 0000 | 0.010 | 1.6 | |
| | 10 30 | 0005 | 0.013 | | |
| | 10 30 | 0025 | 0.014 | | |
| | 10 30 | 0050 | 0.011 | | |
| | 10 30 | 0075 | 0.012 | | |
| | 10 30 | 0100 | 0.011 | | |
| | 10 30 | 0135 | 0.012 | | |
| | 10 30 | 0176 | 0.013 | | |
| 75/08/08 | 15 35 | 0000 | 0.014 | 3.2 | |
| | 15 35 | 0005 | 0.012 | | |
| | 15 35 | 0025 | 0.011 | | |
| | 15 35 | 0055 | 0.011 | | |
| | 15 35 | 0095 | 0.005 | | |
| | 15 35 | 0135 | 0.005 | | |
| | 15 35 | 0175 | 0.005 | | |
| 75/09/22 | 14 25 | 0000 | 0.010 | 2.7 | |
| | 14 25 | 0005 | 0.011 | | |
| | 14 25 | 0025 | 0.011 | | |
| | 14 25 | 0065 | 0.010 | | |
| | 14 25 | 0100 | 0.010 | | |
| | 14 25 | 0145 | 0.018 | | |
| | 14 25 | 0190 | 0.025 | | |

STORET RETRIEVAL DATE 76/08/05

S6050A
40 55 37.0 109 28 52.0 3
FLAMING GORGE RESERVOIR
49009 WYOMING

110691

11EPALES 2111202
0999 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/16 | 11 10 | 0000 | 8.6 | 9.8 | 600 | 538 | 8.50 | 160 | 0.020K | 0.300 | 0.660 | 0.002K |
| | 11 10 | 0005 | 8.4 | 10.0 | | 538 | 8.50 | 160 | 0.020 | 0.400 | 0.650 | 0.002 |
| | 11 10 | 0025 | 5.7 | 10.2 | | 500 | 8.50 | 161 | 0.020 | 0.300 | 0.660 | 0.002 |
| | 11 10 | 0050 | 4.5 | 9.9 | | 487 | 8.45 | 161 | 0.020 | 0.300 | 0.670 | 0.002 |
| | 11 10 | 0075 | 4.3 | 9.9 | | 482 | 8.40 | 161 | 0.030 | 0.400 | 0.680 | 0.003 |
| | 11 10 | 0100 | 3.8 | 9.8 | | 476 | 8.40 | 162 | 0.030 | 0.300 | 0.690 | 0.002K |
| | 11 10 | 0150 | 3.5 | 9.0 | | 477 | 8.30 | 166 | 0.040 | 1.300 | 0.920 | 0.002 |
| | 11 10 | 0200 | 3.0 | 9.0 | | 489 | 8.30 | 167 | 0.040 | 0.600 | 0.930 | 0.002 |
| 75/08/11 | 11 35 | 0000 | 22.0 | 7.6 | 168 | 489 | 9.30 | 112 | 0.020K | 0.500 | 0.310 | 0.004 |
| | 11 35 | 0005 | 22.0 | 7.6 | | 489 | 9.30 | 112 | 0.020K | 0.400 | 0.320 | 0.004 |
| | 11 35 | 0026 | 21.6 | 6.6 | | 489 | 8.80 | 93 | 0.040 | 0.400 | 0.340 | 0.003 |
| | 11 35 | 0055 | 13.1 | 7.8 | | 336 | 8.80 | 141 | 0.030 | 0.400 | 0.650 | 0.004 |
| | 11 35 | 0090 | 10.0 | 7.8 | | 492 | 8.80 | 157 | 0.020 | 0.300 | 0.780 | 0.006 |
| | 11 35 | 0135 | 7.8 | 8.2 | | 515 | 8.80 | 159 | 0.020 | 0.300 | 0.860 | 0.004 |
| | 11 35 | 0175 | 6.8 | 8.0 | | 523 | 8.80 | 160 | 0.020K | 0.300 | 0.870 | 0.004 |
| 75/09/22 | 15 00 | 0000 | 19.1 | 6.2 | 180 | 471 | 8.55 | 118 | 0.020K | 0.300 | 0.320 | 0.004 |
| | 15 00 | 0005 | 18.8 | 7.0 | | 467 | 8.60 | 118 | 0.020K | 0.300 | 0.320 | 0.002 |
| | 15 00 | 0030 | 18.7 | 7.2 | | 462 | 8.50 | 117 | 0.020K | 0.300 | 0.320 | 0.002 |
| | 15 00 | 0060 | 15.0 | 5.1 | | 341 | 8.10 | 135 | 0.020K | 0.300 | 0.600 | 0.002 |
| | 15 00 | 0095 | 12.5 | 7.2 | | 482 | 8.15 | 143 | 0.020K | 0.200 | 0.660 | 0.002K |
| | 15 00 | 0130 | 11.2 | 7.8 | | 512 | 8.20 | 158 | 0.020K | 0.200 | 0.760 | 0.003 |
| | 15 00 | 0162 | 10.7 | 6.8 | | 527 | 8.10 | 165 | 0.020K | 0.200 | 0.860 | 0.004 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

S6050R
40 55 37.0 109 28 52.0 3
FLAMING GORGE RESERVOIR
49009 WYOMING
110691

11EPALES 2111202
0999 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/16 | 11 10 | 0000 | 0.011 | 1.5 | |
| | 11 10 | 0005 | 0.010 | | |
| | 11 10 | 0025 | 0.010 | | |
| | 11 10 | 0050 | 0.010 | | |
| | 11 10 | 0075 | 0.012 | | |
| | 11 10 | 0100 | 0.011 | | |
| | 11 10 | 0150 | 0.012 | | |
| | 11 10 | 0200 | 0.013 | | |
| 75/08/11 | 11 35 | 0000 | 0.005 | 2.7 | |
| | 11 35 | 0005 | 0.005 | | |
| | 11 35 | 0026 | 0.005 | | |
| | 11 35 | 0055 | 0.005 | | |
| | 11 35 | 0090 | 0.004 | | |
| | 11 35 | 0135 | 0.004 | | |
| | 11 35 | 0175 | 0.004 | | |
| 75/09/22 | 15 00 | 0000 | 0.010 | 2.7 | |
| | 15 00 | 0005 | 0.012 | | |
| | 15 00 | 0030 | 0.009 | | |
| | 15 00 | 0060 | 0.008 | | |
| | 15 00 | 0095 | 0.008 | | |
| | 15 00 | 0130 | 0.008 | | |
| | 15 00 | 0162 | 0.013 | | |

STORET RETRIEVAL DATE 76/08/05

560509
40 54 56.0 109 25 18.0 3
FLAMING GORGE RESERVOIR
49009 WYOMING

110691

11EPALES 2111202
0999 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00010 WATER TEMP CENT | 00300 DO MG/L | 00077 TRANSP SECCHI INCHES | 00094 CNDUCTVY FIELD MICROMHO | 00400 PH SU | 00410 T ALK CACO3 MG/L | 00610 NH3-N TOTAL MG/L | 00625 TOT KJEL N MG/L | 00630 NO2&NO3 N-TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75/05/16 | 11 45 | 0000 | 9.3 | 9.8 | 180 | 521 | 8.50 | 154 | 0.030 | 0.600 | 0.620 | 0.002K |
| | 11 45 | 0005 | 8.2 | 10.0 | | 499 | 8.50 | 151 | 0.020 | 0.400 | 0.600 | 0.002K |
| | 11 45 | 0025 | 5.5 | 10.0 | | 499 | 8.50 | 156 | 0.030 | 0.300 | 0.630 | 0.003 |
| | 11 45 | 0050 | 4.7 | 10.0 | | 487 | 8.45 | 158 | 0.020 | 0.400 | 0.650 | 0.002K |
| | 11 45 | 0075 | 4.0 | 9.8 | | 479 | 8.40 | 159 | 0.030 | 0.400 | 0.570 | 0.002 |
| | 11 45 | 0100 | 3.8 | 9.4 | | 474 | 8.40 | 160 | 0.030 | 0.300 | 0.710 | 0.003 |
| | 11 45 | 0150 | 3.4 | 9.6 | | 478 | 8.40 | 159 | 0.030 | 0.300 | 0.710 | 0.003 |
| | 11 45 | 0200 | 2.9 | 8.6 | | 491 | 8.50 | 154 | 0.020 | 0.300 | 0.680 | 0.002 |
| 75/08/11 | 12 05 | 0000 | 22.5 | 8.0 | 174 | 489 | 9.10 | 110 | 0.020K | 0.400 | 0.260 | 0.004 |
| | 12 05 | 0005 | 22.4 | 7.2 | | | 9.20 | 109 | 0.020 | 0.300 | 0.260 | 0.003 |
| | 12 05 | 0026 | 20.5 | 6.6 | | 434 | 9.00 | 101 | 0.020 | 0.300 | 0.290 | 0.003 |
| | 12 05 | 0045 | 15.0 | 6.0 | | 408 | 8.70 | 104 | 0.030 | 0.300 | 0.360 | 0.004 |
| | 12 05 | 0075 | 11.1 | 7.0 | | 448 | 8.70 | 124 | 0.030 | 0.300 | 0.500 | 0.004 |
| | 12 05 | 0110 | 8.6 | 8.0 | | 500 | 8.80 | 152 | 0.020 | 0.400 | 0.580 | 0.004 |
| | 12 05 | 0140 | 7.5 | 8.2 | | 515 | 8.80 | 160 | 0.020 | 0.400 | 0.770 | 0.004 |
| | 12 05 | 0175 | 6.8 | 8.4 | | 521 | 8.40 | 163 | 0.020K | 0.400 | 0.860 | 0.004 |
| 75/09/22 | 15 40 | 0000 | 19.1 | 7.3 | 198 | 430 | 8.60 | 110 | 0.020K | 0.300 | 0.260 | 0.002 |
| | 15 40 | 0005 | 18.9 | 7.2 | | 427 | 8.60 | 111 | 0.020K | 0.400 | 0.260 | 0.002K |
| | 15 40 | 0030 | 18.8 | 6.7 | | 426 | 8.55 | 110 | 0.020K | 0.400 | 0.280 | 0.002 |
| | 15 40 | 0060 | 15.5 | 4.6 | | 395 | 8.00 | 113 | 0.020K | 0.300 | 0.430 | 0.003 |
| | 15 40 | 0100 | 12.2 | 7.0 | | 475 | 8.15 | 152 | 0.020K | 0.200 | 0.600 | 0.004 |
| | 15 40 | 0140 | 10.9 | 7.9 | | 502 | 8.20 | 161 | 0.020K | 0.200 | 0.700 | 0.003 |
| | 15 40 | 0180 | 10.1 | 7.0 | | 519 | 8.10 | 161 | 0.020K | 0.200K | 0.860 | 0.005 |
| | 15 40 | 0220 | 9.8 | 7.1 | | 514 | 8.10 | 161 | 0.020K | 0.200 | 0.840 | 0.005 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/05

560504
40 54 56.0 109 25 18.0 3
FLAMING GORGE RESERVOIR
49009 WYOMING
110691

11EPALES 2111202
0999 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00665 PHOS-TOT MG/L P | 32217 CHLRPHYL A UG/L | 00031 INCDT LT REMNING PERCENT |
|---|---|---|---|---|---|
| 75/05/14 | 11 45 | 0000 | 0.015 | 1.7 | |
| | 11 45 | 0005 | 0.014 | | |
| | 11 45 | 0025 | 0.011 | | |
| | 11 45 | 0050 | 0.010 | | |
| | 11 45 | 0075 | 0.015 | | |
| | 11 45 | 0100 | 0.012 | | |
| | 11 45 | 0150 | 0.013 | | |
| | 11 45 | 0200 | 0.015 | | |
| 75/08/11 | 12 05 | 0000 | 0.004 | 3.0 | |
| | 12 05 | 0005 | 0.005 | | |
| | 12 05 | 0026 | 0.004 | | |
| | 12 05 | 0045 | 0.004 | | |
| | 12 05 | 0075 | 0.004 | | |
| | 12 05 | 0110 | 0.005 | | |
| | 12 05 | 0140 | 0.005 | | |
| | 12 05 | 0175 | 0.009 | | |
| 75/09/22 | 15 40 | 0000 | 0.010 | 2.4 | |
| | 15 40 | 0005 | 0.009 | | |
| | 15 40 | 0030 | 0.011 | | |
| | 15 40 | 0060 | 0.009 | | |
| | 15 40 | 0100 | 0.008 | | |
| | 15 40 | 0140 | 0.008 | | |
| | 15 40 | 0180 | 0.011 | | |
| | 15 40 | 0220 | 0.012 | | |

# APPENDIX E

## TRIBUTARY AND WASTEWATER TREATMENT PLANT DATA

STORET RETRIEVAL DATE 76/08/05

560541
40 54 30.0 109 25 20.0 4
GREEN RIVER
56 7.5 DUTCH JOHN
0/FLAMING GORGE RES 110691
GAGE STATN .4 MI S OF FLAMING GORGE DAM
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/11/12 | 10 20 | | 0.400 | 0.600 | 0.025 | 0.010 | 0.010 |
| 74/12/13 | 13 15 | | 0.660 | 0.300 | 0.010 | 0.005K | 0.010K |
| 75/01/14 | 16 30 | | 0.681 | 0.600 | 0.030 | 0.007 | 0.020 |
| 75/02/06 | 16 30 | | 0.665 | 1.300 | 0.024 | 0.008 | 0.010K |
| 75/03/05 | 16 30 | | 0.610 | 2.400 | 0.020 | 0.010 | 0.010 |
| 75/04/11 | 11 20 | | 0.660 | 0.550 | 0.020 | 0.005K | 0.010K |
| 75/05/14 | 15 15 | | 0.720 | 0.200 | 0.030 | | |
| 75/05/24 | 07 00 | | 0.035 | 0.400 | 0.025 | 0.010 | 0.140 |
| 75/06/24 | 13 35 | | 0.680 | 0.250 | 0.015 | 0.005K | 0.020 |
| 75/07/28 | 14 10 | | 0.750 | 0.350 | 0.015 | 0.005 | 0.010 |
| 75/08/08 | 09 25 | | 0.900 | 0.500 | 0.015 | 0.010 | |
| 75/09/24 | 13 50 | | 0.910 | 0.400 | 0.005K | 0.005 | 0.010 |
| 75/10/17 | 13 45 | | 0.880 | 0.600 | 0.015 | 0.005K | 0.090 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560581
40 48 15.0 109 27 10.0 4
CART CREEK
56 7.5 MOUNT LENA
T/FLAMING GORGE RES 110691
BRDG ON DIRT RD 1 MI NE JCT W ST RT 44
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/11/12 | 09 | 15 | 0.024 | 0.300 | 0.015 | 0.005 | 0.010 |
| 74/12/12 | 10 | 15 | 0.048 | 0.300 | 0.010 | 0.005 | 0.010K |
| 75/06/02 | 12 | 55 | 0.010 | 0.700 | 0.105 | 0.010 | 0.030 |
| 75/07/28 | 10 | 25 | 0.005 | 0.300 | 0.010 | 0.005 | 0.020 |
| 75/08/12 | 12 | 00 | 0.010 | 0.800 | 0.030 | 0.005 | 0.040 |
| 75/09/23 | 14 | 10 | 0.010 | 1.400 | 0.009 | 0.005 | 0.010 |
| 75/10/17 | 08 | 30 | 0.005 | 0.300 | 0.010 | 0.005K | 0.040 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

5605C1
40 51 50.0 109 34 36.0 4
W FORK EAGLE CREEK
56 7.5 E PARK RES
T/FLAMING GORGE RES 110691
30 FT DSTRM FRM BRDG 1 M NE RT 44 JCT
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/11/12 | 13 40 | | 0.120 | 0.300 | 0.020 | 0.005K | 0.010K |
| 74/12/12 | 12 15 | | 0.160 | 0.200 | 0.010 | 0.005K | 0.010K |
| 75/01/17 | 11 25 | | 0.124 | 0.356 | 0.072 | 0.005 | 0.030 |
| 75/02/07 | 09 40 | | 0.160 | 2.000 | 0.016 | 0.008K | 0.010K |
| 75/06/02 | 10 25 | | 0.040 | 2.400 | 0.035 | 0.010 | 0.020 |
| 75/07/28 | 11 25 | | 0.015 | 0.150 | 0.010 | 0.005 | 0.020 |
| 75/08/12 | 14 00 | | 0.020 | 0.300 | 0.065 | 0.005K | 0.010 |
| 75/09/23 | 14 55 | | 0.045 | 0.400 | 0.010 | 0.005 | 0.010 |
| 75/10/17 | 09 05 | | 0.040 | 0.300 | 0.005 | 0.005K | 0.040 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560501
41 09 27.0 109 30 13.0 4
UPPER MARSH CREEK
56 15 BUCKBORD XING
T/FLAMING GORGE RES 110691
BRDG ON LOTY RD 1.8 MI E BRINEGAR RANCH
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/10/05 | 11 | 25 | 0.624 | 1.100 | 0.030 | 0.015 | 0.105 |
| 74/11/08 | 09 | 45 | 0.704 | 1.100 | 0.015 | 0.030 | 0.030 |
| 74/12/07 | 09 | 45 | 0.680 | 0.650 | 0.050 | 0.005 | 0.050 |
| 75/01/05 | 14 | 55 | 0.512 | 1.350 | 0.024 | 0.015 | 0.035 |
| 75/02/09 | 14 | 20 | 0.472 | 0.800 | 0.060 | 0.082 | 0.090 |
| 75/03/09 | 15 | 00 | 0.500 | 0.900 | 0.030 | 0.010 | 0.095 |
| 75/04/06 | 16 | 05 | 0.510 | 1.500 | 0.065 | 0.010 | 0.160 |
| 75/05/10 | 14 | 10 | 0.330 | 0.850 | 0.035 | 0.250 | 0.295 |
| 75/05/24 | 14 | 20 | 0.430 | 2.200 | 0.060 | 0.010 | 0.150 |
| 75/06/06 | 15 | 00 | 0.345 | 0.750 | 0.010 | 0.010 | 0.070 |
| 75/07/03 | 13 | 20 | 0.540 | 1.250 | 0.030 | 0.005K | 0.050 |
| 75/08/14 | 12 | 00 | 0.840 | 0.450 | 0.030 | 0.005K | 0.010K |
| 75/09/23 | 10 | 20 | 0.780 | 0.500 | 0.015 | 0.010 | 0.050 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560SE1
40 59 05.0 109 39 58.0 4
BIRCH SPRING DRAW
56 DAGGETT CO MAP
T/FLAMING GORGE RES 110691
CLVRT ON SEC RD 3 MI E OF MANILA
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/11/12 | 12 45 | | 17.230 | 1.600 | 0.035 | 0.010 | 0.170 |
| 74/12/10 | 14 15 | | 19.520 | 1.300 | 0.025 | 0.005K | 0.010K |
| 75/01/17 | 10 15 | | 15.300 | 1.200 | 0.080 | 0.012 | 0.050 |
| 75/02/07 | 11 00 | | 23.000 | 1.900 | 0.060 | 0.016 | 0.050 |
| 75/03/07 | 10 30 | | | 2.000 | 0.150 | 0.035 | 0.080 |
| 75/04/11 | 09 15 | | 46.000 | 2.100 | 0.065 | 0.010 | 0.070 |
| 75/05/16 | 16 25 | | 53.700 | 2.000 | 0.064 | 0.027 | 0.040 |
| 75/06/26 | 15 30 | | 3.000 | 2.000 | 0.065 | 0.017 | |
| 75/07/28 | 12 15 | | 2.300 | 2.600 | 0.035 | 0.035 | |
| 75/08/12 | 13 00 | | 2.700 | 1.750 | 0.035 | 0.060 | 0.290 |
| 75/09/23 | 15 45 | | 2.400 | | 0.045 | 0.005 | 0.010K |
| 75/10/17 | 10 00 | | 5.400 | 1.100 | 0.010 | 0.005K | 0.090 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

5605F1
41 40 50.0 109 46 10.0 4
HENRY'S FORK
56 15 BUCKBORD XING
T/FLAMING GORGE RES 110691
E END OF DIRT RD .4 MI N JCT W LOTY RD
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/10/05 | 15 | 25 | 0.016 | 0.700 | 0.015 | 0.009 | 0.010 |
| 74/11/08 | 13 | 35 | 0.032 | 0.600 | 0.025 | 0.020 | 0.020 |
| 74/12/07 | 14 | 30 | 0.020 | 0.300 | 0.015 | 0.005K | 0.020 |
| 75/01/05 | 11 | 00 | 0.112 | 0.200 | 0.008K | 0.005K | 0.020 |
| 75/02/09 | 11 | 45 | 0.124 | 1.300 | 0.022 | 0.006 | 0.020 |
| 75/03/09 | 12 | 40 | 0.030 | 1.650 | 0.034 | 0.010 | 0.100 |
| 75/04/06 | 12 | 20 | 0.010 | 1.450 | 0.025 | 0.005K | 0.130 |
| 75/05/10 | 11 | 20 | 0.015 | 0.550 | 0.025 | 0.010 | 0.020 |
| 75/05/24 | 10 | 20 | 0.070 | 1.800 | 0.035 | 0.020 | |
| 75/06/06 | 12 | 25 | 0.015 | 1.500 | 0.010 | 0.020 | |
| 75/07/03 | 10 | 01 | 0.020 | 0.450 | 0.015 | 0.010 | 0.090 |
| 75/08/08 | 12 | 15 | 0.010 | 0.650 | 0.025 | 0.010 | 0.220 |
| 75/09/08 | 13 | 25 | 0.015 | 0.300 | 0.030 | 0.005 | 0.030 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560561
41 15 18.0 109 40 50.0 4
BLACKS FORK
56 15 MCKINNON JCT
T/FLAMING GORGE RES 110691
1 MI S OF END LDTY RD W OF BONOMO RANCH
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/10/05 | 16 55 | | 0.008 | 0.900 | 0.055 | 0.005 | 0.020 |
| 74/11/08 | 15 10 | | 0.032 | 0.700 | 0.015 | 0.010 | 0.040 |
| 74/12/07 | 16 30 | | 0.024 | 0.500 | 0.010 | 0.025 | 0.050 |
| 75/01/05 | 08 30 | | 0.080 | 0.500 | 0.032 | 0.005 | 0.030 |
| 75/02/09 | 10 20 | | 0.040 | 1.500 | 0.030 | 0.015 | 0.045 |
| 75/03/09 | 10 45 | | 0.110 | 1.400 | 0.030 | 0.015 | 0.240 |
| 75/04/06 | 10 00 | | 0.142 | 2.000 | 0.040 | 0.020 | 0.330 |
| 75/05/10 | 09 15 | | 0.035 | 1.150 | 0.030 | 0.025 | 0.280 |
| 75/05/24 | 08 45 | | 0.180 | 3.600 | 0.035 | 0.045 | |
| 75/06/06 | 10 30 | | 0.010 | 2.200 | 0.025 | 0.020 | |
| 75/07/03 | 08 20 | | 0.020 | 0.750 | 0.020 | 0.020 | 0.190 |
| 75/08/08 | 13 20 | | 0.010 | 0.500 | 0.017 | 0.005 | 0.080 |
| 75/09/08 | 14 40 | | 0.015 | 0.600 | 0.017 | 0.005K | 0.060 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

5605M1
41 17 40.0 109 28 28.0 4
SAGE CREEK
56 15 FIREHOLE BASN
T/FLAMING GORGE RES 110691
200 FT SW JCT OF DIRT RD & LDTY RD
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/10/05 | 10 35 | | 0.016 | 1.500 | 0.030 | 0.345 | 0.470 |
| 74/11/08 | 08 10 | | 0.152 | 0.800 | 0.045 | 0.020 | 0.130 |
| 74/12/07 | 08 15 | | 0.208 | 0.500 | 0.025 | 0.040 | 0.100 |
| 75/01/05 | 16 00 | | 0.232 | 1.000 | 0.044 | 0.012 | 0.170 |
| 75/02/09 | 15 30 | | 0.212 | 1.500 | 0.060 | 0.008 | 0.260 |
| 75/03/09 | 15 30 | | 0.055 | 2.000 | 0.045 | 0.020 | 0.100 |
| 75/04/06 | 16 50 | | 0.550 | 6.000 | 0.120 | 0.025 | |
| 75/05/10 | 15 20 | | 0.165 | 2.100 | 0.030 | 0.005 | |
| 75/05/25 | 15 20 | | 0.300 | | 0.050 | 0.030 | |
| 75/06/06 | 16 05 | | 0.375 | 4.900 | 0.040 | 0.010 | |
| 75/07/03 | 14 40 | | 0.185 | 7.500 | 0.040 | 0.020 | 0.090 |
| 75/08/08 | 08 15 | | 0.005 | 0.700 | 0.015 | 0.040 | 0.060 |
| 75/09/08 | 09 00 | | 0.005 | 1.250 | 0.015 | 0.020 | 0.115 |

STORET RETRIEVAL DATE 76/08/05

5605J1
41 14 45.0 109 29 29.0 4
CURRANT CREEK
56 15 CURNT CRK RCH
T/FLAMING GORGE RES 110691
BRDG ON LDTY RD 1.2 MI WNW CURRANT CK RH
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/10/05 | 10 55 | | 0.016 | 1.300 | 0.050 | 0.075 | 0.100 |
| 74/11/08 | 09 05 | | 0.056 | 0.500 | 0.025 | 0.030 | 0.070 |
| 74/12/07 | 09 00 | | 0.096 | 0.800 | 0.025 | 0.020 | 0.040 |
| 75/01/05 | 15 30 | | 0.208 | 0.500 | 0.028 | 0.020 | 0.070 |
| 75/02/04 | 14 45 | | 0.164 | 0.400 | 0.060 | 0.016 | 0.090 |
| 75/03/09 | 15 55 | | 0.160 | 4.500 | 0.050 | 0.030 | |
| 75/04/06 | 16 35 | | 0.020 | 1.350 | 0.040 | 0.020 | 0.140 |
| 75/05/10 | 14 45 | | 0.025 | 1.150 | 0.030 | 0.010 | 0.090 |
| 75/05/24 | 14 45 | | 0.165 | 0.900 | 0.040 | 0.025 | |
| 75/06/06 | 15 40 | | 0.200 | 3.300 | 0.160 | 0.030 | |
| 75/07/03 | 14 10 | | 0.320 | 0.600 | 0.040 | 0.015 | 0.100 |
| 75/08/08 | 09 00 | | 0.240 | 2.300 | 0.045 | 0.020 | 0.170 |
| 75/09/08 | 09 05 | | 0.120 | 0.500 | 0.015 | 0.025 | 0.100 |

STORET RETRIEVAL DATE 75/08/05

560SK1
41 05 45.0 109 30 20.0 4
MIDDLE MARSH CREEK
56 15 BUCKBORD XING
T/FLAMING GORGE RES 110691
BRDG ON LOTY RD 4.7 MI SSE BRINEGAR RNCH
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/10/05 | 11 55 | | 0.432 | 2.000 | 0.050 | 0.020 | 0.070 |
| 74/11/08 | 10 35 | | 0.690 | 1.050 | 0.070 | 0.075 | 0.115 |
| 74/12/07 | 10 30 | | 0.768 | 0.700 | 0.020 | 0.005 | 0.030 |
| 75/01/05 | 14 20 | | 0.316 | 1.200 | 0.030 | 0.021 | 0.070 |
| 75/02/09 | 13 45 | | 0.304 | 0.500 | 0.040 | 0.024 | 0.070 |
| 75/03/09 | 14 35 | | 0.270 | 0.750 | 0.025 | 0.020 | 0.090 |
| 75/04/06 | 15 30 | | 0.240 | 1.250 | 0.035 | 0.010 | 0.110 |
| 75/05/10 | 13 40 | | 0.140 | 1.130 | 0.035 | 0.005 | 0.090 |
| 75/05/24 | 13 45 | | 0.140 | 1.650 | 0.040 | 0.015 | 0.080 |
| 75/06/06 | 14 25 | | 0.140 | 1.700 | 0.010 | 0.005K | 0.130 |
| 75/07/03 | 12 40 | | 0.550 | 1.250 | 0.050 | 0.020 | 0.130 |
| 75/08/08 | 10 00 | | 0.060 | 0.950 | 0.030 | 0.005 | 0.020 |
| 75/09/08 | 10 45 | | 0.280 | 1.400 | 0.085 | 0.005K | 0.050 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

5605L1
41 00 03.0 109 26 00.0 4
SPRING CREEK
56 CURRANT CRK RNCH
T/FLAMING GORGE RES 110691
50 FT W OF BASIN RD .2 MI SSW MINNES GAP
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/10/05 | 12 55 | | 0.280 | 4.200 | 0.045 | 0.065 | |
| 74/11/08 | 11 20 | | 0.280 | 1.200 | 0.095 | 0.030 | 0.950 |
| 74/12/07 | 11 15 | | 0.216 | 0.800 | 0.015 | 0.010 | 0.460 |
| 75/01/05 | 13 30 | | 0.160 | 0.700 | 0.024 | 0.010 | 0.110 |
| 75/02/09 | 13 00 | | 0.152 | 1.900 | 0.055 | 0.008K | 0.720 |
| 75/03/09 | 14 05 | | 0.120 | 3.300 | 0.035 | 0.025 | 2.400 |
| 75/04/06 | 15 00 | | 0.130 | 3.300 | 0.055 | 0.015 | 1.950 |
| 75/05/10 | 13 15 | | 0.120 | 3.300 | 0.060 | 0.010 | 0.800 |
| 75/05/24 | 13 40 | | 0.270 | 0.600 | 0.095 | 0.040 | 0.300 |
| 75/06/06 | 13 40 | | 0.130 | 5.100 | 0.065 | 0.020 | 1.550 |
| 75/07/03 | 10 00 | | 0.090 | 0.800 | 0.030 | 0.010 | 0.340 |
| 75/08/08 | 10 40 | | 0.095 | 2.300 | 0.040 | 0.010 | |
| 75/09/08 | 11 15 | | 0.040 | | 0.050 | 0.010 | |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

560541
40 56 09.0 109 25 19.0 4
UNNAMED CREEK
56 7.5 DUTCH JOHN
T/FLAMING GORGE RES 110691
BRDG ON DIRT RD 2.5 MI WNW OF DUTCH JOHN
11EPALES 2111204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P |
|---|---|---|---|---|---|---|---|
| 74/11/12 | 11 20 | | 0.500 | 0.300 | 0.040 | 0.005K | 0.010 |
| 74/12/09 | 14 30 | | 0.030 | 0.600 | 0.020 | 0.005K | 0.010K |
| 75/02/07 | 12 30 | | 0.007 | 1.300 | 0.015 | 0.006 | 0.010 |
| 75/03/07 | 11 45 | | | 0.400 | 0.010 | 0.015 | 0.015 |
| 75/04/11 | 10 55 | | 0.035 | 0.900 | 0.015 | 0.005 | 0.010K |
| 75/05/16 | 14 50 | | 0.010 | 0.762 | 0.135 | 0.005 | 0.015 |
| 75/06/20 | 16 35 | | 0.010 | 0.800 | 0.005K | 0.005K | 0.030 |
| 75/09/23 | 13 10 | | 0.012 | 1.400 | 0.040 | 0.010 | 0.020 |
| 75/10/18 | 18 15 | | 0.010 | 0.100K | 0.005K | 0.010 | 0.045 |

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/08/05

5605AA PD5605AA P004000
41 31 40.0 109 28 30.0 4
GREEN RIVER
56 7.5 GREEN RIVER
T/FLAMING GORGE RES 110691
GREEN RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P | 50051 FLOW RATE INST MGD | 50053 CONDUIT FLOW-MGD MONTHLY |
|---|---|---|---|---|---|---|---|---|---|
| 75/04/04 | 10 30 | | 0.015 | 30.000 | 10.000 | 5.040 | 13.500 | | |
| 75/05/06 | 14 45 | | 0.050 | 40.000 | 16.000 | 13.500 | 14.000 | | |
| 75/06/17 | 10 00 | | 0.050 | 25.000 | 13.500 | 8.700 | 34.000 | | |
| 75/08/01 | 15 00 | | 0.250 | 24.000 | 0.850 | 8.800 | 10.500 | | |
| 75/10/22 | 09 30 | | 0.050 | 20.000 | 0.440 | 8.600 | 10.000 | 0.650 | |
| 75/11/25 | 00 00 | | 0.025 | 29.000 | 8.400 | 11.300 | 13.500 | | 0.670 |
| 75/12/23 | 08 00 | | 0.075 | 33.000 | 17.000 | 15.000 | 15.000 | 0.600 | |
| 76/01/09 | 14 30 | | 0.025 | 43.500 | 31.500 | 6.000 | 15.500 | 0.790 | |
| 76/01/20 | 16 00 | | 0.300 | 26.000 | 11.000 | 13.500 | 14.500 | | |
| 76/02/03 | 08 00 | | 0.950 | 33.000 | 26.000 | 8.900 | 16.000 | 0.700 | |
| 76/02/17 | 10 30 | | 0.025 | 37.000 | 26.200 | 6.600 | 15.000 | | |
| 76/03/02 | 10 00 | | 0.050 | 36.000 | 28.000 | 9.700 | | | |
| 76/03/16 | 10 45 | | 0.015 | 35.000 | 10.200L | 8.200 | 14.000 | | |

L ACTUAL VALUE IS KNOWN TO BE
GREATER THAN VALUE GIVEN

STORET RETRIEVAL DATE 76/08/05

560540M AS5605AM P003000
41 30 00.0 109 27 00.0 4
UPLAND ADD U.P. GREEN RIVER
56 7.5 GREEN RIVER
T/FLAMING GORGE RES 110691
GREEN RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P | 50051 FLOW RATE INST MGD | 50053 CONDUIT FLOW-MGD MONTHLY |
|---|---|---|---|---|---|---|---|---|---|
| 75/10/23 | 14 | 15 | 0.125 | 18.000 | 0.375 | 6.600 | 7.100 | | |
| 75/11/25 | | | 0.050 | 34.000 | 4.400 | 7.500 | 9.600 | | |
| 75/12/04 | 09 | 00 | 0.025 | 26.000 | 6.000 | 8.100 | 10.500 | | |
| 75/12/23 | 08 | 45 | 0.025 | 28.000 | 9.100 | 8.700 | | | |
| 76/01/08 | 14 | 15 | 0.025 | 32.000 | 10.500 | 8.800 | 9.200 | | |
| 76/01/20 | 15 | 45 | 0.025 | 23.000 | 11.500 | 8.000 | 9.900 | | |
| 76/02/03 | 08 | 15 | 0.025 | 23.000 | 8.200 | 8.000 | 9.400 | | |
| 76/02/17 | 10 | 00 | 0.025 | 20.000 | 6.800 | 7.100 | 8.700 | | |
| 76/03/02 | 09 | 30 | 0.025 | 18.000 | 7.000 | 6.400 | 7.700 | | |
| 76/03/16 | 11 | 00 | 0.025 | 21.000 | 6.000 | 7.600 | 8.400 | | |
| 76/03/31 | 14 | 30 | 0.100 | 22.600 | 6.300 | 7.400 | 9.000 | | |
| 76/04/14 | 14 | 15 | | 19.000 | | | 10.000 | | |
| 76/05/14 | 11 | 20 | | 26.000 | | | 14.000 | | |

STORET RETRIEVAL DATE 76/08/05

S605EA PU5605EA P000600
40 59 20.0 109 43 30.0 4
MANILA
56 7.5 MANILA
T/FLAMING GORGE 110091
BIRCH SPRING CREEK
11EPALES 2141204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P | 50051 FLOW RATE INST MGD | 50053 CONDUIT FLOW-MGD MONTHLY |
|---|---|---|---|---|---|---|---|---|---|
| 75/02/14 | 12 50 | | 1.200 | 8.100 | 0.540 | 2.500 | 2.500 | 0.066 | |
| 75/04/02 | 14 00 | | 8.013 | 12.000 | 0.220 | 3.600 | 4.800 | 0.323 | 0.323 |
| 75/04/15 | 13 10 | | 0.200 | 9.000 | 0.250 | 2.000 | 2.800 | | |
| 75/05/13 | 13 15 | | 0.088 | 6.400 | 1.750 | 1.330 | 1.700 | 0.200 | |
| 75/06/24 | 16 30 | | 0.175 | 8.400 | 0.120 | 1.450 | 1.540 | 0.0001 | 0.0001 |
| 75/07/23 | 15 55 | | 0.225 | 6.500 | 0.350 | 1.050 | 1.050 | 0.160 | 0.200 |
| 75/08/27 | 15 30 | | 0.450 | 2.600 | 0.175 | 0.600 | 0.720 | 0.320 | 0.300 |
| 75/10/15 | 15 35 | | 0.025 | 26.000 | 0.025 | 0.535 | 9.700 | 0.300 | 0.300 |
| 75/11/14 | 15 10 | | 0.100 | 3.800 | 0.130 | 1.050 | 1.100 | 0.200 | 0.300 |

STORET RETRIEVAL DATE 75/05/05

5605XA TF5605XA P013000
41 35 00.0 109 13 30.0 4
ROCK SPRINGS
56 7.5 ROCK SPRINGS
T/FLAMING GORGE RES 110691
BITTER CREEK
11EPALES 2141204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P | 50051 FLOW RATE INST MGD | 50053 CONDUIT FLOW-MGD MONTHLY |
|---|---|---|---|---|---|---|---|---|---|
| 75/02/07 | 08 00 | | | | | | | | |
| CP(T)- | | | 0.800 | 17.000 | 13.100 | 7.900 | 9.200 | 1.400 | 1.400 |
| 75/02/07 | 14 00 | | | | | | | | |
| 75/03/06 | 08 00 | | | | | | | | |
| CP(T)- | | | 0.480 | 26.000 | 20.800 | 10.000 | 11.000 | 2.600 | 1.920 |
| 75/03/06 | 14 00 | | | | | | | | |
| 75/04/07 | 08 00 | | | | | | | | |
| CP(T)- | | | 1.840 | 26.000 | 0.420 | | 12.500 | 1.400 | 1.400 |
| 75/04/07 | 14 00 | | | | | | | | |
| 75/04/28 | 08 00 | | | | | | | | |
| CP(T)- | | | 0.650 | 26.000 | 12.500 | 8.200 | 13.500 | 1.380 | 1.360 |
| 75/04/28 | 14 00 | | | | | | | | |
| 75/05/19 | 08 00 | | | | | | | | |
| CP(T)- | | | 2.700 | 27.000 | 14.000 | 12.000 | 12.000 | 1.470 | 1.410 |
| 75/05/19 | 14 00 | | | | | | | | |
| 75/06/10 | 08 00 | | | | | | | | |
| CP(T)- | | | 5.900 | 18.500 | 11.000 | 9.400 | 10.500 | 1.450 | 1.440 |
| 75/06/10 | 14 00 | | | | | | | | |
| 75/06/30 | 08 00 | | | | | | | | |
| CP(T)- | | | 5.600 | 22.000 | 7.400 | 10.500 | 12.000 | 1.570 | 1.450 |
| 75/06/30 | 14 00 | | | | | | | | |
| 75/07/22 | 08 00 | | | | | | | | |
| CP(T)- | | | 4.100 | 14.300 | 12.000 | 10.000 | 10.300 | 1.450 | 1.400 |
| 75/07/22 | 14 00 | | | | | | | | |
| 75/08/19 | 08 00 | | | | | | | | |
| CP(T)- | | | 2.600 | 21.000 | 6.900 | 9.300 | 10.000 | 1.470 | 1.410 |
| 75/08/19 | 14 00 | | | | | | | | |
| 75/09/17 | 08 00 | | | | | | | | |
| CP(T)- | | | 1.600 | 25.000 | 8.000 | 8.800 | 9.800 | 1.470 | 1.430 |
| 75/09/17 | 14 00 | | | | | | | | |
| 75/09/30 | 08 00 | | | | | | | | |
| CP(T)- | | | 0.725 | 26.000 | 11.300 | 11.000 | 12.500 | 1.430 | 1.410 |
| 75/09/30 | 14 00 | | | | | | | | |
| 75/10/21 | 10 00 | | | | | | | | |
| CP(T)- | | | 0.575 | 29.000 | 11.500 | 10.500 | 12.500 | 1.380 | 1.450 |
| 75/10/21 | 14 00 | | | | | | | | |

STORET RETRIEVAL DATE 76/08/05

5605XA TF5605XA P013000
41 35 00.0 109 13 30.0 4
ROCK SPRINGS
56 7.5 ROCK SPRINGS
T/FLAMING GORGE RES 110691
BITTER CREEK
11EPALES 2141204
0000 FEET DEPTH CLASS 00

| DATE FROM TO | TIME OF DAY | DEPTH FEET | 00630 NO2&NO3 N-TOTAL MG/L | 00625 TOT KJEL N MG/L | 00610 NH3-N TOTAL MG/L | 00671 PHOS-DIS ORTHO MG/L P | 00665 PHOS-TOT MG/L P | 50051 FLOW RATE INST MGD | 50053 CONDUIT FLOW-MGD MONTHLY |
|---|---|---|---|---|---|---|---|---|---|
| 75/11/18 | 08 00 | | | | | | | | |
| CP(T)- | | | 1.250 | 26.000 | 12.000 | 9.200 | 11.500 | 1.410 | 1.430 |
| 75/11/18 | 14 00 | | | | | | | | |